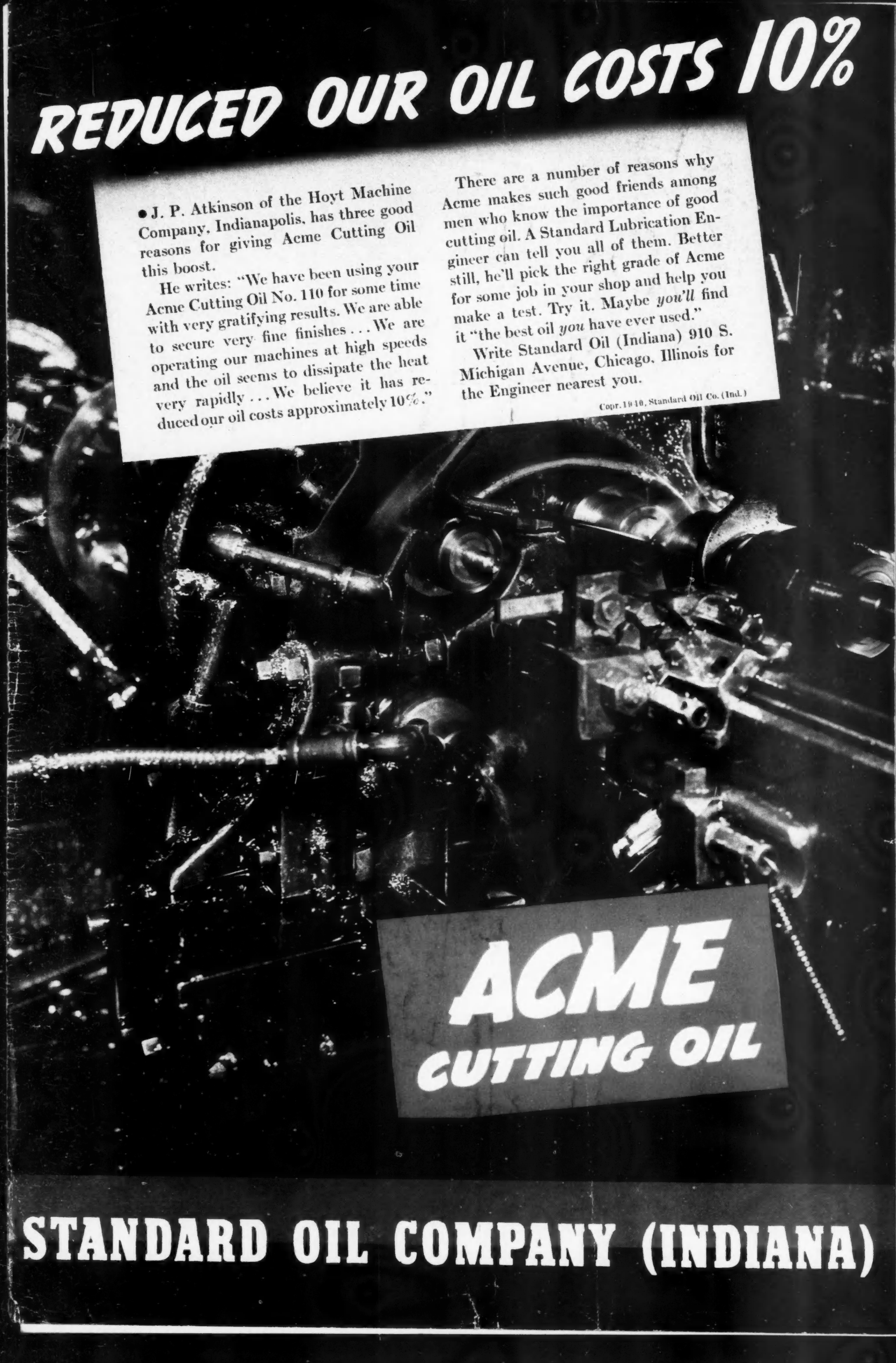
22nd ANNUAL STATISTICAL ISSUE

AUTOMOTIVE INDUSTRIES

LAND — AIR — WATER

MARCH 1, 1940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AUTOMOTIVE INDUSTRIES
The AUTOMOBILE

Reg. U. S. Pat. Off.
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Volume 82 | Number 5

22ND ANNUAL STATISTICAL ISSUE

CONTENTS

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IN THIS ISSUE....

AUTOMOTIVE INDUSTRIES

Reg. U. S. Pat. Off.
Volume 82 March 1, 1940 Number 5

Acknowledgment

So much interest was created by our study of the average life of passenger cars as described in detail in the article, "Today's Cars Are Longer Lived," which appeared in the 1939 Statistical Issue of AUTOMOTIVE INDUSTRIES, Feb. 25, 1939, that it was decided to carry on this work for at least another year. In the lead article of this issue are our findings as pertaining to the number of cars in use by year of manufacture and by make. For supplying basic data for all original calculations for this article we are indebted to the Reuben H. Donnelley Corp.

Following this study of cars in use are various valuable data pertaining to production, new registrations (sales), total registrations and an exclusive Chilton count of passenger car dealer representations by makes, states and population groups. This general factual section of what happened in the automobile industry during 1939 is followed by complete specifications of passenger cars, trucks, buses, stock engines, aircraft and Diesel engines, and outboard motors.

To all the manufacturers who so willingly cooperated in furnishing the specifications of their products we give our sincere thanks and appreciation. Also mention must be made of the splendid work and assistance of John Yerger, who compiled the specification section of this book.

Special mention is also gratefully given to Mr. Paul Mattix, Acting Chief, Aeronautics-Automotive Trade Division, Bureau of Foreign and Domestic Commerce, for supplying export data, and to Mr. George Quisenberry, Editor, *The American Automobile* (Overseas Edition) for furnishing the registration statistics of foreign countries. The writer also sincerely appreciates the splendid cooperation of the motor vehicle commissioners of the various states who so willingly and carefully fill out our questionnaires regarding total registration in their states.

To those who sent us material that does not appear in this publication, sincere regrets. All of it was extremely valuable and interesting, but space limitations forbid its publication in this special issue.

PRODUCTION

Since 1913 all issues of AUTOMOTIVE INDUSTRIES have been indexed in the *Industrial Arts Index*, which can be consulted in any public library.

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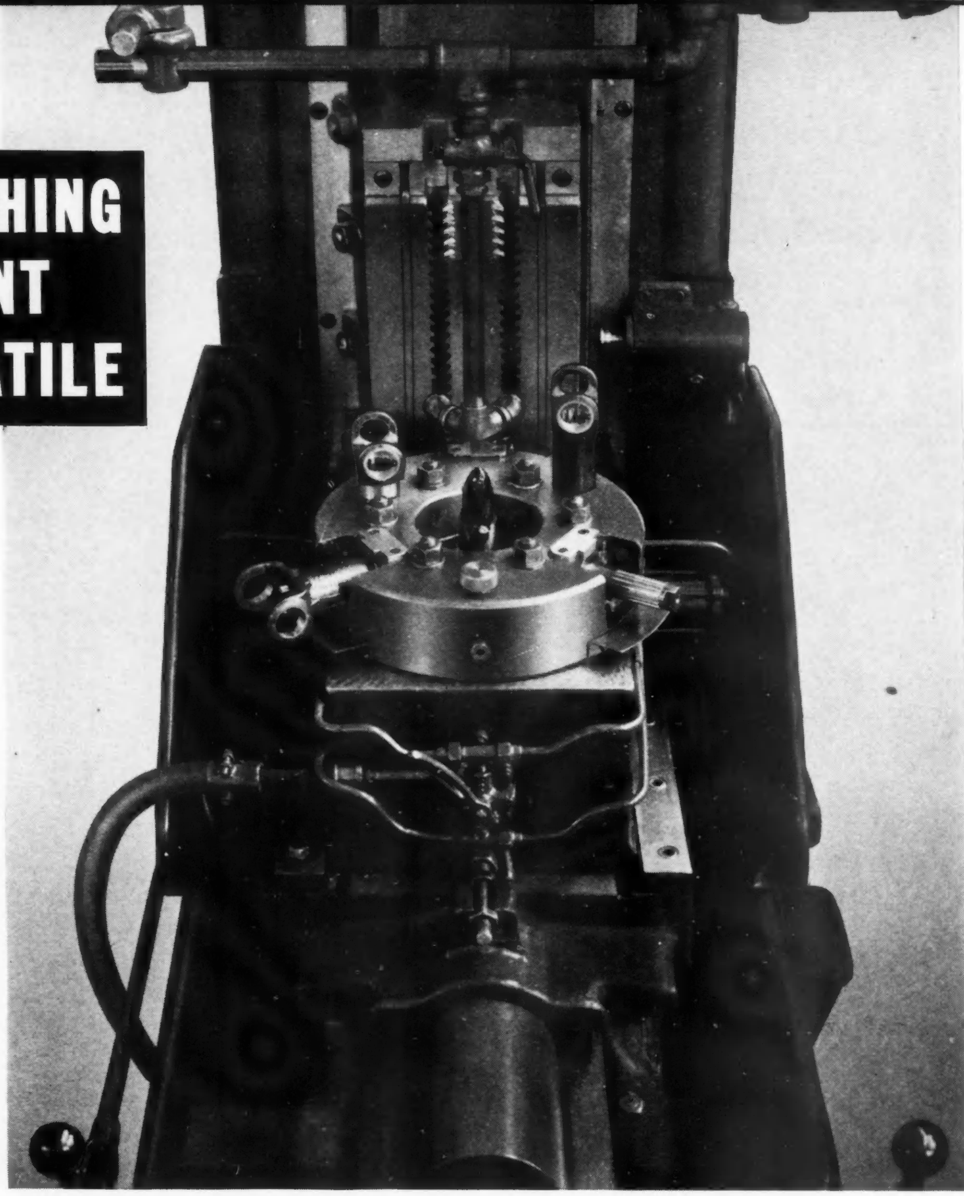

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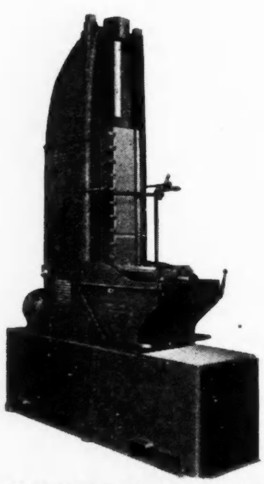

• CINCINNATI Single Ram Vertical Hydro - Broach Machine. Catalog M-834 will be mailed on request.

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22nd ANNUAL STATISTICAL ISSUE

AUTOMOTIVE INDUSTRIES

Published on the 1st and 15th of the month

Vol. 82, No. 5
March 1, 1940

"Big Three" Dominate the Roads 3 to 2

By MARCUS AINSWORTH*

FIFTY-FIVE per cent of the passenger cars registered in the U. S. today are five years of age or less. Over 83 per cent are 10 years of age or less, with only 17 per cent of the cars remaining in operation that were built during 1929 or prior to that year.

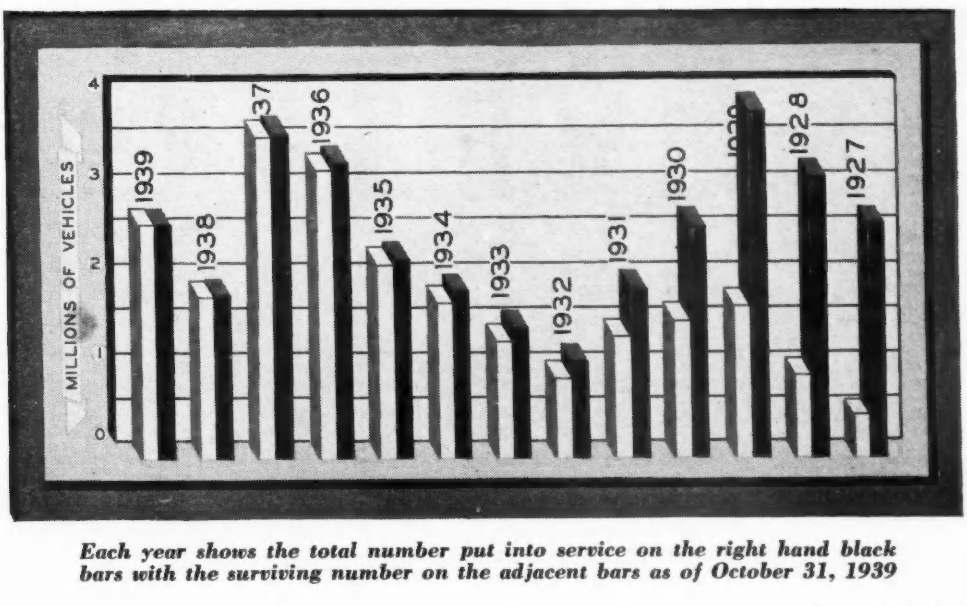
Ford leads the field with 6,200,000 or 25.4 per cent of the total in use. Chevrolet follows closely on the heels of Ford with 6,010,000 cars or 24.6 per cent of the total. With Plymouth added, the "Big Three" cars account for approximately 61 per cent of all passenger cars that were in use as of the end of the 1939 model year.

These facts are brought out in a continuation of the original study of passenger car registrations that was presented in the 1939 Statistical Issue of AUTOMOTIVE INDUSTRIES (Feb. 25, 1939). Some revisions have been necessary in the Life Curve of Automobiles as calculated at that time and further revisions will be necessary for the next few years until the average of cars in use remains at a more constant figure. It is felt that this condition will be reached about the time that all cars built prior to 1930 are eliminated from the cars remaining in service.

In this latest survey of cars in operation, methods of study followed closely the lines mentioned in detail in the previous study, "Today's Cars Are Longer Lived," AUTOMOTIVE INDUSTRIES, Feb. 25, 1939. However, for the present study a considerably larger sample was obtainable. Through the cooperation of the Reuben H. Donnelley Corp., data were obtained which permitted a study of the rate of mortality for virtually the whole United States, the only excepted areas the States of Pennsylvania and Delaware. Because of the large sample it is felt the present study is a much more comprehensive picture of conditions as they are today. It was gratifying to observe that the case presented a year ago, on the basis of registration data for the States of Ohio, Kansas and New York, correlates closely with the results of this new study.

Rather than confine the survey to one year's findings, averages were obtained from the mortality rates of the past three years, which it is believed, gives a life curve of passenger cars that will be applicable to more than one year. These three years covered changing economic conditions in the country, which naturally materially effect the life curve of passenger cars. Nineteen thirty-seven, a boom year, was combined with 1938, which was an extremely poor year both for the automobile industry and the country as a whole,

Original Automobile Sales and Their Survivors



Each year shows the total number put into service on the right hand black bars with the surviving number on the adjacent bars as of October 31, 1939

*Statistician, AUTOMOTIVE INDUSTRIES.

Estimated Cars in Use By Makes

(As of October 31, 1939)

Make of Car	Number Surviving at End of Model Year	Per Cent of Total Surviving	Make of Car	Number Surviving at End of Model Year	Per Cent of Total Surviving	Make of Car	Number Surviving at End of Model Year	Per Cent of Total Surviving
Ford	6,213,967	25.42	Willys-Overland	441,443	1.81	Mercury	58,590	.24
Chevrolet	6,010,806	24.59	Packard	390,470	1.60	Reo	49,637	.20
Plymouth	2,667,295	10.91	De Soto	347,474	1.42	Pierce-Arrow	22,458	.09
Dodge	1,368,550	5.60	Hudson	278,624	1.14	Franklin	20,817	.08
Buick	1,287,258	5.27	Graham-G. Paige	167,574	.69			
Pontiac-Oakland	1,225,820	5.02	La Salle	125,522	.51	Total—These Makes	24,233,627	......
Oldsmobile	974,405	3.99	Hupmobile	110,782	.45			
Chrysler-Maxwell	572,727	2.34	Cadillac	100,087	.41			
Terraplane-Essex	556,949	2.28	Lincoln and L. Zephyr	94,494	.39	Miscellaneous	207,296	.85
Studebaker	544,539	2.23	Durant	83,636	.34			
Nash-LaFayette	449,870	1.84	Auburn-Cord	69,833	.29	Total—Cars in Use	24,440,923	100.00

and with 1939, which had a distinct rise in all general industrial and economic conditions.

From the revised life curve shown on the right, it has been possible to calculate the number of cars remaining in use today from among those manufactured each year. In all calculations the model year (November 1 to October 31, since 1935) was used, as it was thought that any uses these data were put to would be of more service when considered as various model years rather than calendar years.

An estimate of Cars in Use by Makes and Year of Manufacture, is shown in the table on this page.

Readers should bear in mind that this presentation is a statistical calculation only and, as such, is subject to statistical faults. It is believed, however, that a picture is given which is as near to actual conditions as it is possible to be, and is highly suitable for any general purpose to which it might be put. While there exists a country-wide census of cars in service, with all duplications eliminated, data as to year of manufacture are extremely difficult to extract, due to the way records are kept by many states. As a result, many inaccuracies occur, which we believe are largely eliminated by this statistical study.

The table at the top of this page shows the number of survivors by makes arranged according to their numerical order.

Estimated Cars in Use by Year of Manufacture

(As of October 31, 1939)

	New Registrations for Model Year	Per Cent Surviving	Number Surviving by Model Years	Per Cent Surviving by Model Years	Cumulative Per Cent Surviving
†1939	2,603,095	100.00	2,603,095	10.65	10.65
†1938	1,839,285	99.6	1,831,928	7.50	18.15
†1937	3,658,525	98.7	3,610,964	14.77	32.92
†1936	3,312,090	97.6	3,232,600	13.23	46.15
‡1935	2,286,452	96.0	2,194,994	8.98	55.13
1934	1,888,557	93.3	1,762,024	7.21	62.34
1933	1,493,794	89.0	1,329,477	5.44	67.78
1932	1,096,399	82.0	899,047	3.68	71.46
1931	1,908,141	71.9	1,371,953	5.61	77.07
1930	2,625,979	58.8	1,544,076	6.32	83.39
1929	3,880,206	44.0	1,707,291	6.98	90.37
1928	3,139,579	29.2	916,757	3.75	94.12
1927	2,623,538	17.9	469,613	1.92	96.04
1926	3,228,401	11.1	358,353	1.47	97.51
*1925	3,870,744	6.9	267,081	1.09	98.60
*1924	3,303,646	4.4	145,360	.59	99.19
*1923	3,753,945	2.8	105,110	.43	99.62
*1922	2,417,104	1.8	43,508	.18	99.80
*1921	1,555,468	1.2	18,666	.08	99.88
*1920	2,050,238	.8	16,402	.07	99.95
*1919	1,850,865	.5	9,254	.04	99.99
*1918	1,123,442	.3	3,370	.01	100.00
Total Cars in Use			24,440,923	100.00	

† From November 1 to October 31, the model year.
‡ Ten months or 1935 model year.
* U. S. production less U. S exports.

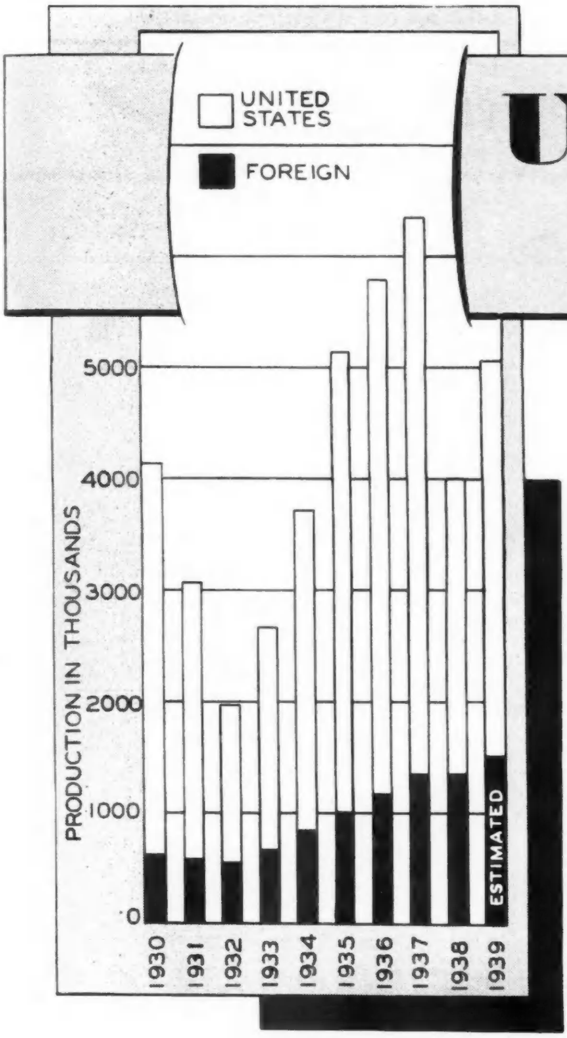
Estimated Cars in Use by Make and Year of Manufacture

(As of October 31, 1939)

	1939†	1938†	1937†	1936†	1935‡	1934	1933	1932	1931	1930	1929 and Older Cars
Auburn-Cord	....	....	1,534	2,168	4,637	5,165	4,484	9,550	21,236	6,627	14,432
Buick	205,378	161,707	206,455	144,355	60,223	58,841	38,990	40,760	65,338	72,122	233,089
Cadillac	13,000	9,203	12,167	11,320	4,327	4,571	3,474	5,141	8,007	7,102	21,775
Chevrolet	577,986	463,908	795,789	885,982	514,113	499,067	422,299	264,745	419,485	363,904	803,528
Chrysler-Maxwell	68,875	47,559	90,389	49,832	34,422	26,172	25,522	21,334	37,855	35,814	134,953
De Soto	55,103	36,211	73,439	38,730	22,265	10,400	18,921	20,755	20,441	20,737	30,472
Dodge	191,308	102,013	268,350	233,416	140,058	84,100	76,595	23,051	38,172	37,694	173,793
Durant	....	....	....	....	....	....	....	930	5,198	12,607	64,901
Ford	456,792	343,094	799,099	750,217	686,733	494,983	276,890	212,320	380,050	620,397	1,193,392
Franklin	....	....	....	....	....	336	1,183	1,500	2,790	4,399	10,609
Graham-G. Paige	4,266	4,766	14,965	15,355	13,568	12,023	9,014	10,543	13,811	17,722	51,541
Hudson	55,920	40,588	12,729	21,108	16,722	18,013	2,622	7,086	13,797	17,914	72,125
Hupmobile	988	1,021	315	2,320	6,343	6,126	5,986	8,851	12,530	14,292	52,010
La Salle	21,599	14,509	29,553	11,431	9,200	4,835	3,301	3,155	4,949	6,622	16,368
Lincoln-L. Zephyr	19,276	17,000	25,234	12,469	1,342	1,923	1,880	2,607	2,492	2,561	7,710
Mercury	58,590	....	....	....	....	....	....	....	....	....	....
Nash-LaFayette	50,033	33,422	70,696	35,975	28,714	22,034	10,104	16,591	28,304	30,039	123,958
Oldsmobile	138,238	86,795	189,775	177,376	116,935	66,874	31,413	19,785	33,781	29,700	83,733
Packard	56,245	50,701	97,849	61,423	27,840	6,113	8,082	9,067	11,688	16,651	44,811
Pierce-Arrow	....	24	255	819	694	1,623	1,915	2,207	3,251	3,995	7,675
Plymouth	387,452	267,553	495,466	461,676	307,328	282,286	222,204	91,779	67,794	37,809	45,948
Pontiac-Oakland	149,327	95,164	218,734	158,102	112,994	67,778	75,960	39,299	61,930	52,942	193,590
Reo	....	....	....	3,381	3,237	3,596	3,224	3,173	4,862	6,733	21,431
Studebaker	76,965	39,578	73,680	60,022	32,263	38,775	19,302	20,502	33,457	33,237	116,758
Terraplane-Essex	....	....	83,718	73,094	42,085	37,796	31,890	23,598	30,590	37,243	196,935
Willys-Overland	12,732	15,481	48,008	12,641	7,899	6,135	13,944	21,236	36,914	38,670	227,783
Total—These Makes	2,600,073	1,830,297	3,608,199	3,223,212	2,193,942	1,759,565	1,309,199	879,565	1,358,722	1,527,533	3,943,320

Model years from November 1 to October 31. ‡ Ten months or 1935 model years.

U. S. and World Production



Wholesale Values of Production

(U. S. and Canada)

Year	Passenger Cars Units*	Passenger Cars Value	Trucks Units†	Trucks Value	Cars and Trucks Units	Cars and Trucks Value
1912	356,000	$ 335,000,000	22,000	$ 43,000,000	378,000	$378,000,000
1913	461,500	399,902,000	23,500	44,000,000	485,000	443,902,000
1914	543,679	413,859,000	25,375	45,098,464	569,054	458,957,843
1915	895,930	575,978,000	74,000	125,800,000	969,930	701,778,000
1916	1,525,578	921,378,000	92,130	161,000,000	1,617,708	1,082,378,000
1917	1,745,792	1,053,505,781	128,157	220,982,668	1,873,949	1,274,488,499
1918	943,436	901,937,925	227,250	434,168,992	1,170,686	1,236,106,917
1919	1,657,652	1,461,785,925	275,943	423,326,621	1,933,595	1,885,112,546
1920	1,905,560	1,809,170,963	321,789	423,249,410	2,227,349	2,232,420,373
1921	1,518,061	1,091,752,452	164,304	169,914,098	1,682,365	1,261,666,550
1922	2,369,089	1,561,740,645	277,140	231,282,063	2,646,229	1,793,022,708
1923	3,753,945	2,274,554,488	426,505	317,478,940	4,180,450	2,592,033,428
1924	3,303,646	2,040,706,519	434,140	326,706,496	3,737,786	2,367,413,015
1925	3,870,744	2,544,528,799	557,056	470,634,763	4,427,800	3,015,163,562
1926	3,948,843	2,746,064,722	556,818	468,752,769	4,505,661	3,214,817,491
1927	3,083,360	2,265,633,102	497,020	435,072,641	3,580,380	2,700,705,743
1928	4,012,158	2,703,753,500	588,983	459,045,380	4,601,141	3,162,798,880
1929	4,794,8[illegible]8	2,981,141,842	826,811	595,504,039	5,621,709	3,576,645,881
1930	2,910,1[illegible]7	1,720,652,104	599,991	405,949,915	3,510,178	2,126,602,019
1931	2,038,183	1,153,907,947	434,176	272,748,305	2,472,359	1,426,656,252
1932	1,186,209	650,781,297	245,285	142,264,003	1,431,494	793,045,300
1933	1,627,367	795,304,780	358,614	192,131,509	1,985,981	987,436,289
1934	2,270,566	1,204,376,351	599,397	332,913,985	2,869,963	1,537,290,336
1935	3,387,806	1,788,635,180	732,005	399,211,522	4,119,811	2,187,846,702
1936	3,797,897	2,092,460,475	818,377	481,961,420	4,616,274	2,574,421,895
1937	4,068,935	2,397,717,534	947,502	573,310,107	5,016,437	2,971,027,641
1938	2,124,746	1,331,598,129	530,425	358,652,285	2,655,171	1,690,250,414
1939	2,975,530	1,825,008,595	756,844	490,506,055	2,732,374	2,315,514,650

* Includes Taxicabs. † Includes Buses.

Export Data on page 220

World Motor Vehicle Production by Countries—By Years

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
United States	3,555,986	2,389,738	1,370,678	1,920,057	2,753,111	3,946,934	4,454,115	4,808,974	2,489,085	3,577,058
Canada	154,192	86,261	60,816	65,852	116,852	172,877	162,159	207,463	166,086	155,316
Total	3,510,178	2,472,359	1,431,494	1,985,909	2,869,963	4,119,811	4,616,274	5,016,437	2,655,171	3,732,374
Austria	3,200	4,100	2,364	1,575	1,355	2,509	5,275	6,043	*	Due to the unsettled conditions abroad reliable figures were not available.
Belgium	4,700	3,200	2,225	1,400	740	753	534	2,383	1,665	
Czechoslovakia	16,840	16,980	13,580	10,000	10,000	9,978	12,141	13,813	13,000	
Denmark	230	193	148	140	182	148	250	250	308	
France	230,700	196,860	170,955	191,929	201,644	179,270	201,737	201,934	214,989	
Germany	70,044	77,225	50,417	105,832	173,014	242,934	297,512	331,894	352,369	
Hungary	841	237	121	143	222	111	465	615	790	
Italy	42,685	29,280	29,100	42,000	43,416	45,208	43,600	66,000	69,118	
Japan	371	531	675	1,808	2,845	6,800	9,632	14,430	24,100	
Poland	288	200	175	780	800	788	2,400	2,200	2,920	
Soviet Russia	7,972	20,500	26,849	49,675	72,466	97,000	138,400	199,123	210,731	
Spain	450	250	435	375	830	591	....	....	....	
Sweden	2,400	2,444	2,995	2,975	3,122	3,404	4,451	6,626	7,046	
Switzerland	1,000	1,070	996	480	436	460	296	700	600	
United Kingdom	234,571	233,219	244,434	280,526	347,856	416,915	466,335	507,749	447,561	
Total (Foreign)	616,292	576,289	545,469	689,638	858,928	1,006,869	1,183,028	1,353,760	1,345,197	
World Total	4,126,470	3,048,648	1,976,963	2,675,547	3,728,891	5,126,680	5,799,302	6,370,197	4,000,368	

* Included with Germany. † The American Automobile (Overseas Edition), all other years Automotive Division, Bureau of Foreign and Domestic Commerce.

Truck Production by Capacities

(U. S. and Canada)

Truck Tonnage	1933 Number	1933 %	1934 Number	1934 %	1935 Number	1935 %	1936 Number	1936 %	1937 Number	1937 %	1938 Number	1938 %	1939* Number	1939* %
¾ ton or less	98,928	27.6	172,089	28.6	249,957	34.1	316,208	38.6	395,157	41.7	194,827	36.7	290,772	38.4
1 ton and less than 1½	893	.2	2,341	.4	2,259	.3	9,686	1.1	21,580	2.3	30,951	5.8	33,922	4.5
1½ ton and less than 2	228,238	63.7	376,475	62.9	420,597	57.5	423,503	52.0	441,156	46.6	246,200	46.4	339,800	44.9
2 ton and less than 2½	15,866	4.4	25,995	4.3	28,950	4.0	30,637	3.7	30,431	3.2	18,375	3.5	29,480	3.9
2½ ton and less than 3½	7,728	2.2	11,136	1.9	10,465	1.4	12,309	1.5	18,971	2.0	9,954	1.9	20,552	2.7
3½ ton and less than 5	2,859	.8	4,752	.8	3,612	.5	4,621	.5	6,170	.6	4,539	.9	7,568	1.0
5 ton and over	580	.2	1,219	.2	3,824	.5	5,567	.7	9,248	1.0	5,820	1.1	7,071	.9
Special types	3,356	.9	5,390	.9	12,341	1.7	15,846	1.9	24,789	2.6	19,759	3.7	27,679	3.7
Total	358,548	100.0	599,397	100.0	732,005	100.0	818,377	100.0	947,502	100.0	530,425	100.0	756,844	100.0

* Partly estimated

Passenger Car Production by Wholesale Price Classes

(U. S. and Canada)

Number of Units

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939*
Under $500	1,754,747	1,328,294	794,164	1,316,341	1,443,357	1,787,171	1,919,618	1,368,018	329,858	206,442
$501-$750	680,352	413,929	260,831	237,099	715,989	1,444,529	1,677,558	2,392,415	1,521,404	2,403,062
$751-$1000	204,450	162,954	74,610	31,610	66,223	110,813	143,269	260,280	224,839	310,117
$1,001-$1,500	179,180	80,687	36,670	20,125	27,576	28,736	39,997	31,226	42,160	49,318
$1,501-$2,000	55,351	33,846	8,699	10,409	8,391	8,716	11,545	11,633	3,661	4,309
$2,001-$3,000	27,266	12,714	8,679	8,725	6,879	5,413	4,326	4,061	2,161	1,859
$3,001 and over	8,841	5,759	2,532	2,052	2,151	2,428	1,584	1,302	663	423
Total	2,910,187	2,038,183	1,186,185	1,627,361	2,270,566	3,387,806	3,797,897	4,068,935	2,124,746	2,975,530

Percentage of Total

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939*
Under $500	60.30	65.17	66.95	80.89	63.57	52.75	50.55	33.62	15.50	6.94
$501-$750	23.38	20.31	22.00	14.57	31.53	42.64	44.17	58.80	71.60	80.76
$751-$1,000	7.02	8.00	6.29	2.00	2.92	3.27	3.77	6.40	10.60	10.43
$1,001-$1,500	6.16	3.96	3.09	1.24	1.21	.85	1.05	.77	2.00	1.66
$1,501-$2,000	1.90	1.66	.73	.64	.37	.26	.30	.28	.17	.14
$2,001-$3,000	.94	.62	.73	.54	.31	.16	.11	.10	.10	.06
$3,001 and over	.30	28	.21	.12	.09	.07	.05	.03	.03	.01
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

* Partly estimated]

Monthly Motor Vehicle Production

(U. S. and Canada)

Passenger Cars

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
January	212,244	364,773	242,672	142,869	101,915	112,754	117,700	235,806	308,589	324,191	168,890	292,869	January
February	301,320	431,755	293,036	187,948	98,604	93,153	193,875	287,142	234,872	310,961	151,133	253,914	February
March	386,510	546,489	348,087	241,727	106,003	103,396	291,546	377,374	357,068	423,006	186,341	312,392	March
April	384,778	571,956	393,804	300,960	126,597	156,712	303,806	407,721	436,576	452,907	190,111	286,200	April
May	404,444	541,310	382,619	282,096	165,025	188,675	290,268	322,485	401,139	443,412	168,599	249,455	May
June	381,026	469,260	298,130	215,979	166,646	213,602	272,090	306,300	388,183	429,333	147,545	257,289	June
July	357,682	439,598	230,761	187,324	101,478	196,587	231,501	283,715	379,823	372,913	112,114	155,850	July
August	422,996	452,857	190,864	158,851	79,073	196,333	190,825	186,133	212,140	317,270	61,687	62,452	August
September	374,276	375,046	182,049	111,336	66,489	161,734	129,251	59,499	92,324	120,597	69,449	165,119	September
October	351,899	328,305	117,014	59,176	37,468	107,593	86,128	220,113	194,690	306,040	192,906	259,610	October
November	223,896	176,629	104,668	49,996	49,201	43,868	50,072	347,830	351,171	309,121	335,767	295,134	November
December	211,087	96,920	126,483	99,921	87,710	52,954	113,504	353,688	441,322	259,184	340,204	385,246	December
Total	4,012,158	4,794,898	2,910,187	2,038,183	1,186,209	1,627,361	2,270,566	3,387,806	3,797,897	4,068,935	2,124,746	2,975,530	Total

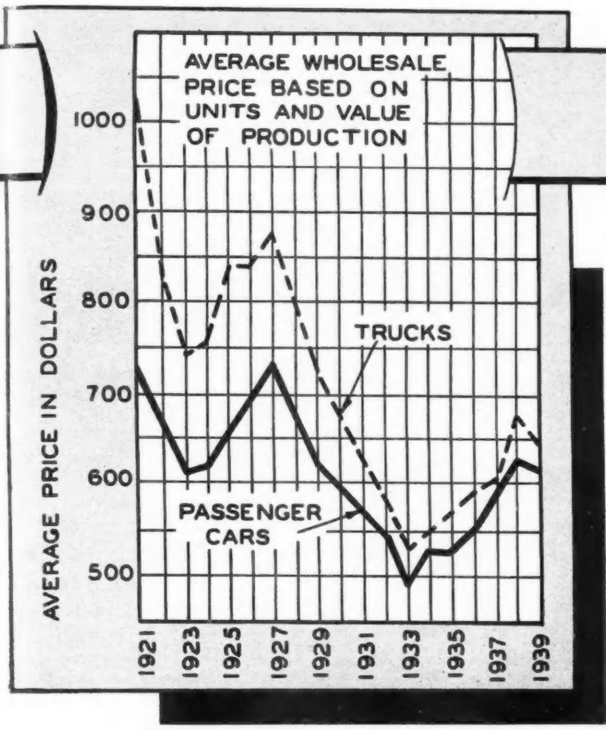
Motor Trucks

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
January	27,947	57,765	40,938	35,475	21,160	19,429	44,870	64,529	68,655	74,995	58,062	64,081	January
February	34,980	65,950	52,925	41,863	24,291	15,592	44,952	63,204	65,938	72,939	51,464	63,603	February
March	44,273	79,587	69,031	47,671	21,274	18,508	61,068	70,520	81,875	96,016	52,106	77,097	March
April	49,537	91,855	74,477	53,138	28,539	27,975	67,532	69,338	91,049	100,324	47,818	68,063	April
May	56,281	94,940	62,080	47,805	27,491	35,132	60,348	59,324	79,379	96,965	41,575	63,759	May
June	44,169	98,164	51,466	41,496	23,572	43,448	48,292	65,785	81,185	91,820	41,857	66,946	June
July	59,630	78,703	44,960	35,366	15,137	39,310	44,546	61,582	71,383	83,996	38,336	62,628	July
August	69,547	59,985	43,296	32,890	15,319	42,601	53,890	58,942	63,794	87,802	35,259	40,891	August
September	62,231	54,683	46,557	31,876	20,003	35,874	46,335	33,229	47,496	55,033	20,174	27,553	September
October	63,921	66,235	41,928	22,406	14,157	30,772	49,643	60,203	35,359	31,939	22,380	65,063	October
November	45,013	50,368	37,493	20,118	12,560	19,106	35,107	60,720	54,628	67,508	54,638	73,404	November
December	32,454	28,582	34,840	24,052	21,782	30,801	42,814	64,629	77,636	88,165	66,756	83,756	December
Total	588,983	826,817	599,991	434,176	245,285	358,548	599,397	732,005	818,377	947,502	530,425	756,844	Total

Passenger Cars and Trucks

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
January	240,191	422,538	283,610	178,344	123,075	132,183	162,570	300,335	377,244	399,186	226,952	356,950	January
February	336,300	497,705	345,961	229,811	122,895	108,745	238,827	350,346	300,810	383,900	202,597	317,517	February
March	430,783	626,076	417,118	289,398	127,277	121,904	352,614	447,894	438,943	519,022	238,447	389,489	March
April	434,315	663,811	468,281	354,098	155,136	184,687	371,338	477,059	527,625	553,231	237,929	354,263	April
May	459,725	636,250	444,699	329,901	192,516	223,807	350,616	381,809	480,518	540,377	210,174	313,214	May
June	425,195	567,424	349,596	257,475	190,218	257,050	320,382	372,085	469,368	521,153	189,402	324,235	June
July	417,312	518,301	275,721	222,710	116,615	235,897	276,047	345,297	451,206	456,909	150,450	218,478	July
August	492,543	512,842	234,160	191,741	94,392	238,934	244,715	245,075	275,934	405,072	96,946	103,343	August
September	436,507	429,729	228,606	143,212	86,492	197,608	175,586	92,728	139,820	175,630	89,623	192,672	September
October	415,820	394,540	158,942	81,582	51,625	138,365	135,771	280,316	230,049	337,979	215,286	324,673	October
November	268,909	226,997	142,161	70,114	61,761	62,974	85,179	408,550	405,799	376,629	390,405	368,538	November
December	243,541	125,502	161,323	123,973	109,492	83,755	156,318	418,317	518,958	347,349	406,960	469,002	December
Total	4,601,141	5,621,715	3,510,178	2,472,359	1,431,494	1,985,909	2,869,963	4,119,811	4,616,274	5,016,437	2,655,171	3,732,374	Total

Figures from U. S. Census Bureau (includes overseas assemblies of motor vehicles of American make) and Dominion Bureau of Statistics.



Passenger Car Production by Cylinders

(U. S. and Canada)

	Per Cent Fours	Per Cent Sixes	Per Cent Eights	Per Cent Twelves and Sixteens	Total
1926	64.0	34.0	2.0	...	100.0
1927	49.7	47.1	3.2	...	100.0
1928	50.7	45.0	4.3	...	100.0
1929	40.7	54.3	5.0	...	100.0
1930	44.5	43.6	11.8	0.1	100.0
1931	33.3	52.0	14.5	0.2	100.0
1932	17.9	50.4	31.1	0.6	100.0
1933	3.2	61.8	34.7	0.3	100.0
1934	1.2	59.8	38.8	0.2	100.0
1935	0.5	59.5	39.4	0.2	100.0
1936	0.5	66.5	32.4	0.6	100.0
1937	1.7	63.8	33.7	0.8	100.0
1938	0.8	62.8	35.4	1.0	100.0
1939	0.6	61.9	36.7	0.8	100.0

1939 State Taxes—$40 per Vehicle

STATE	State Tax per Gallon (Cents)	State Gasoline Tax Receipts		Per Cent Change	State Registration Fees		Per Cent Change	Total State Tax Receipts from Gasoline and Registration Fees		State Taxes per Motor Vehicle	
		1939	1938		1939	1938		1939	1938	1939	1938
Alabama	6	$14,500,000	$13,523,000	+ 7.1	$3,300,000	$4,314,000	−23.5	$17,800,000	$17,837,000	$57.93	$61.41
Arizona	5	5,101,000	4,243,000	+20.3	843,000	1,076,000	−21.5	5,944,000	5,319,000	45.56	41.30
Arkansas	6½	10,652,000	10,004,000	+ 6.5	3,077,000	2,908,000	+ 5.9	13,729,000	12,912,000	57.03	58.32
California	3	49,385,000	47,101,000	+ 4.8	24,500,000	23,930,000	+ 2.6	73,885,000	71,031,000	28.36	28.30
Colorado	4	7,823,000	7,465,000	+ 4.9	2,438,000	2,544,000	− 4.2	10,261,000	10,009,000	29.87	23.79
Connecticut	3	10,054,000	9,192,000	+ 9.0	6,758,000	6,611,000	+ 2.1	16,812,000	15,803,000	47.59	36.47
Delaware	4	2,500,000	2,069,000	+21.0	1,350,000	1,216,000	+11.1	3,850,000	3,285,000	55.39	51.26
District of Columbia	2	2,785,000	2,509,000	+11.0	1,843,000	2,145,000	−14.0	4,628,000	4,654,000	23.65	28.23
Florida	7	24,318,000	22,801,000	+ 6.6	7,000,000	6,432,000	+ 9.0	31,318,000	29,233,000	68.49	69.19
Georgia	6	21,291,000	19,633,000	+ 8.5	1,883,000	1,974,000	− 4.6	23,174,000	21,607,000	48.86	49.51
Idaho	5	4,120,000	4,088,000	+ 1.0	1,375,000	2,380,000	−42.2	5,495,000	6,468,000	36.63	47.06
Illinois	3	39,001,000	36,481,000	+ 7.0	23,830,000	21,591,000	+10.3	62,831,000	58,072,000	33.78	32.43
Indiana	4	23,830,000	22,259,000	+ 7.0	9,800,000	9,635,000	+ 2.0	33,630,000	31,894,000	35.88	34.76
Iowa	3	14,173,000	13,233,000	+ 7.0	12,719,000	11,797,000	+ 8.0	26,892,000	25,030,000	35.23	33.69
Kansas	3	10,500,000	10,017,000	+ 5.0	3,900,000	3,823,000	+ 2.0	14,400,000	13,840,000	24.95	24.11
Kentucky	5	13,826,000	12,528,000	+10.4	3,771,000	4,599,000	−18.0	17,597,000	17,127,000	40.22	41.71
Louisiana	7	17,381,000	16,543,000	+ 5.1	5,369,000	4,892,000	+ 9.9	22,750,000	21,435,000	64.35	64.79
Maine	4	6,750,000	5,558,000	+21.7	3,700,000	3,582,000	+ 3.3	10,450,000	9,140,000	52.46	46.46
Maryland	4	10,638,000	9,929,000	+ 7.1	4,750,000	5,069,000	− 6.2	15,388,000	14,998,000	36.36	37.97
Massachusetts	3	21,498,000	20,194,000	+ 6.8	7,086,000	6,759,000	+ 4.9	28,584,000	26,953,000	32.74	31.98
Michigan	3	29,788,000	27,724,000	+ 7.5	21,965,000	20,856,000	+ 5.2	51,753,000	48,580,000	46.12	34.48
Minnesota	4	18,646,000	19,380,000	− 3.6	9,660,000	9,377,000	+ 3.0	28,306,000	28,757,000	33.70	35.01
Mississippi	6	11,309,000	10,181,000	+11.2	4,050,000	4,001,000	+ 1.2	15,359,000	14,182,000	69.27	65.90
Missouri	2	11,700,000	11,502,000	+ 1.8	10,224,000	9,439,000	+ 8.5	21,924,000	20,941,000	24.99	25.01
Montana	5	4,809,000	4,452,000	+ 8.0	1,342,000	1,546,000	−13.2	6,151,000	5,998,000	34.11	35.00
Nebraska	5	11,000,000	11,026,000	......	2,600,000	2,442,000	+ 6.7	13,600,000	13,468,000	33.14	32.85
Nevada	4	1,355,000	1,201,000	+13.0	286,000	265,000	+ 8.0	1,641,000	1,466,000	40.12	38.15
New Hampshire	4	3,500,000	3,297,000	+ 6.3	3,300,000	2,711,000	+22.0	6,800,000	6,008,000	53.79	49.55
New Jersey	3	21,227,000	22,294,000	− 4.8	19,668,000	20,204,000	− 2.7	40,895,000	42,498,000	40.11	42.46
New Mexico	5	4,286,000	4,066,000	+ 5.2	1,850,000	1,643,000	+12.6	6,136,000	5,709,000	50.44	47.90
New York	4	69,689,000	66,132,000	+ 5.3	47,994,000	47,124,000	+ 1.8	117,683,000	113,256,000	44.67	43.38
North Carolina	6	24,441,000	23,300,000	+ 4.9	7,377,000	7,211,000	+ 2.2	31,818,000	30,511,000	56.85	57.69
North Dakota	4	2,648,000	2,254,000	+18.0	1,534,000	1,523,000	+ 0.8	4,182,000	3,777,000	23.61	21.67
Ohio	4	50,000,000	45,982,000	+ 9.0	26,197,000	27,204,000	− 3.8	76,197,000	73,186,000	40.38	39.92
Oklahoma	4	14,412,000	13,905,000	+ 3.7	6,693,000	5,779,000	+15.8	21,105,000	19,684,000	38.23	36.85
Oregon	5	10,582,000	9,846,000	+ 7.3	3,445,000	2,922,000	+18.0	14,027,000	12,768,000	37.97	35.73
Pennsylvania	4	53,000,000	51,914,000	+ 2.2	36,436,000	34,513,000	+ 5.8	89,436,000	86,427,000	42.60	43.10
Rhode Island	3	3,794,000	3,492,000	+ 8.7	2,924,000	2,778,000	+ 5.2	6,718,000	6,270,000	38.21	36.83
South Carolina	6	12,297,000	11,254,000	+ 8.3	1,836,000	1,633,000	+12.3	14,133,000	12,887,000	46.99	46.15
South Dakota	4	3,956,000	4,048,000	− 2.4	1,700,000	1,983,000	−14.0	5,656,000	6,031,000	29.89	33.38
Tennessee	7	18,740,000	18,276,000	+ 2.8	4,318,000	4,173,000	+ 3.3	23,058,000	22,449,000	56.58	56.31
Texas	4	44,183,000	42,720,000	+ 3.3	21,225,000	20,263,000	+ 4.8	65,408,000	62,983,000	40.42	41.88
Utah	4	3,736,000	3,522,000	+ 6.0	1,056,000	1,097,000	− 3.6	4,792,000	4,619,000	36.07	32.14
Vermont	4	2,686,000	2,530,000	+ 6.1	2,500,000	2,365,000	+ 5.8	5,186,000	4,895,000	57.16	56.00
Virginia	5	17,829,000	16,620,000	+ 7.2	6,707,000	6,134,000	+ 9.2	24,536,000	22,754,000	54.19	52.47
Washington	5	15,918,000	15,421,000	+ 3.2	4,100,000	3,262,000	+25.9	20,018,000	18,683,000	37.89	35.69
West Virginia	5	9,875,000	9,386,000	+ 5.2	5,026,000	5,498,000	− 8.5	14,901,000	14,884,000	55.52	57.21
Wisconsin	4	20,270,000	19,253,000	+ 5.1	13,170,000	13,001,000	+ 1.1	33,440,000	32,254,000	39.58	38.54
Wyoming	4	2,574,000	2,505,000	+ 2.8	622,000	601,000	+ 3.5	3,196,000	3,106,000	38.32	38.45
Total		$808,376,000	$766,853,000	+ 5.2	$399,097,000	$388,825,000	+ 2.7	$1,207,473,000	$1,155,678,000	$40.00†	$39.27†

† Average

NEW VEHICLE

New Truck Registrations*

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Autocar	2,009	1,748	1,015	1,127	1,139	1,001	1,451	2,181	1,617	2,044
Brockway	3,780‡	1,685‡	752	875	1,213	1,245	1,695	1,593	1,303	1,815
Chevrolet	118,253	99,600	60,784	99,880	157,507	167,129	204,344	183,674	119,479	169,457
Diamond T	2,888	2,483	2,250	4,139	5,440	6,454	8,750	8,118	4,393	5,412
Dodge	15,558	13,518	8,744	28,034	48,252	61,488	85,295	64,098	33,656	48,049
Federal	2,095	1,523	1,167	1,360	1,962	2,190	2,930	2,339	1,370	1,837
Ford	197,216	138,854	66,937	62,397	128,250	185,848	177,244	189,376	100,959	128,889
G. M. C.	9,004	6,919	6,359	6,602	10,449	11,442	26,980	43,522	20,152	34,908
Hudson	......	......	......	......	......	638	1,905	4,823	719	409
Indiana	......	......	957	1,252	729	862	1,705	1,371	435	178
International	23,703	21,073	15,752	26,658	31,555	53,471	71,958	76,174	55,836	66,048
Mack	4,943	2,945	1,425	1,652	1,830	1,515	4,226	5,513	4,406	6,670
Plymouth	......	......	......	......	......	660	2,420	13,709	6,652	8,294
Reo	6,427	5,166	3,187	3,042	5,035	5,101	4,227	4,254	2,929	853
Sterling	1,244	739	227	108	134	174	277	311	267	326
Stewart	2,315	1,394	867	684	736	880	1,280	1,148	390	70
Studebaker	1,518	3,495	2,430	2,407†	1,697	2,100	3,279	5,129	2,000	2,110
White	4,395	2,561	2,138	1,384	3,963	3,304	5,757	5,933	3,514	4,558
Willys	4,264	3,131	1,132	233	25	2,280	2,441	1,122	1,889	1,634
All Others	11,107	7,050	4,290	4,035	3,970	2,901	3,480	3,861	3,383	3,187
Total	410,699	313,884	180,413	245,869	403,886	510,683	611,644	618,249	365,349	486,748

‡ Includes Indiana. † Includes Rockne. * Data from R. L. Polk & Co.

New Passenger Car Registrations*

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Auburn	17,850	11,270	29,536	11,646	5,038	5,536	5,163	1,848	146	......	......
Bantam (Austin)	......	4,354	2,941	......	3,675	1,057	......	......	......	700	1,227
Buick	172,307	122,656	90,873	49,708	43,809	63,067	87,635	160,687	205,297	166,380	218,995
Cadillac	14,936	12,078	11,136	6,269	3,903	4,899	6,692	11,766	11,231	10,639	13,090
Chevrolet	780,011	618,884	583,429	322,860	474,493	534,906	656,698	930,250	768,040	464,337	598,341
Chrysler	84,518	60,908	52,650	26,016	28,677	28,052	40,536	58,698	91,622	46,184	63,956
Continental	......	......	......	......	3,310	953	......	......	......	......	......
Cord	799	1,879	1,416	335	......	......	......	1,174	1,149	......	......
De Soto	59,614	35,267	28,430	25,311	21,260	11,447	26,952	45,088	74,424	35,259	51,951
De Vaux	......	......	4,808	1,358	......	......	......	......	......	......	......
Dodge	115,773	64,105	53,090	28,111	86,062	90,139	178,770	248,518	255,258	104,881	176,585
Durant	47,715	21,440	7,229	1,135	......	......	......	......	......	......	......
Ford	1,310,135	1,055,097	528,581	258,927	311,113	530,528	826,519	748,554	765,933	363,688	481,496
Franklin	10,704	7,482	3,881	1,829	1,329	360	......	......	......	......	......
Graham	60,487	30,140	19,209	12,858	10,128	12,887	15,965	16,439	13,984	4,139	3,660
Hudson	62,692	30,466	19,189	8,641	2,946	19,307	21,587	20,825	90,043	40,889	62,855
Hupmobile	44,337	24,307	17,427	10,794	6,726	6,566	7,450	1,556	403	1,020	907
La Fayette	......	......	......	......	......	9,301	17,445	......	......	......	......
La Salle	20,290	11,262	6,883	3,848	3,709	5,182	11,775	13,992	28,909	15,732	22,197
Lincoln	6,151	4,356	3,466	3,179	2,112	2,061	2,370	15,567	25,243	16,991	19,940
Marmon	22,323	12,369	5,687	1,365	86	......	......	......	......	......	......
Mercury	......	......	......	......	......	......	......	......	......	6,835	65,884
Nash	105,146	51,036	33,366	20,233	11,353	14,315	17,739	43,070	70,571	31,814	54,050
Oakland	31,830	21,648	12,985	......	......	......	......	......	......	......	......
Oldsmobile	93,483	50,510	45,983	24,128	35,295	71,676	149,375	178,488	188,306	92,398	146,412
Packard	44,634	28,318	16,256	11,058	9,081	6,552	37,653	68,772	95,455	49,163	62,005
Pierce-Arrow	8,385	6,795	4,522	2,692	2,152	1,740	875	787	167	17	......
Plymouth	84,969	64,301	94,239	111,926	249,667	302,557	382,985	499,580	462,268	286,241	348,807
Pontiac	153,272	63,389	73,148	47,926	85,348	72,645	140,122	171,669	212,403	98,399	159,836
Reo	17,319	11,450	6,762	3,870	3,623	3,854	3,894	3,146	......	......	......
Rockne	......	......	2	16,966	14,554	......	......	......	......	......	......
Studebaker	82,839	56,526	46,533	25,002	21,688	41,560	39,573	67,835	70,048	41,504	84,660
Terraplane (Essex)	191,331	63,339	42,545	23,778	35,831	40,510	53,838	78,471	†	†	†
Willys-Whippet	162,366	51,687	42,936	22,483	15,314	6,576	10,439	12,423	51,411	13,012	14,734
Willys-Knight	37,343	14,079	8,405	3,415	353	......	......	......	......	......	......
Miscellaneous	31,646	9,532	3,548	3,732	1,159	324	1,858	5,294	1,441	799	1,789
Total	3,830,246	2,625,979	1,908,141	1,096,399	1,493,794	1,888,557	2,743,908	3,405,497	3,483,752	1,891,021	2,653,377

By Manufacturing Groups

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Chrysler Corp.	344,874	224,581	228,459	191,364	385,666	432,195	629,243	851,884	883,572	472,565	641,299
Ford Motor Co.	1,316,286	1,059,453	532,047	262,106	313,225	532,589	828,889	764,121	791,176	387,514	567,320
General Motors	1,271,129	905,427	825,437	454,739	646,556	752,375	1,052,297	1,466,852	1,414,186	847,885	1,158,871
All Others	947,917	436,518	322,198	98,190	148,347	171,398	233,479	321,640	394,818	183,057	285,887

* Data from R. L. Polk & Co. † Terraplane included with Hudson

REGISTRATIONS

U. S. Registrations of New Cars and Trucks*

U. S. New Passenger Car Registrations

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
January	219,760	180,094	126,776	87,493	79,821	61,242	136,635	215,775	280,685	145,765	203,212	January
February	235,590	211,645	134,133	82,813	69,464	94,887	170,615	176,651	215,049	120,359	164,942	February
March	377,802	298,824	200,841	92,192	78,741	173,287	261,477	301,239	363,738	181,222	248,038	March
April	481,675	357,064	265,732	121,093	119,909	223,050	319,650	397,186	384,951	192,241	268,335	April
May	454,132	345,031	247,727	131,282	160,242	219,225	293,199	392,744	391,697	178,052	280,834	May
June	386,398	260,861	201,911	148,752	174,190	223,864	280,360	369,422	360,236	156,384	243,741	June
July	432,503	254,098	194,322	104,188	185,660	229,006	285,178	357,490	365,767	148,896	229,308	July
August	376,886	203,737	155,744	93,457	178,661	193,198	233,851	262,912	306,958	127,954	182,633	August
September	304,452	175,286	124,903	81,893	157,976	146,931	157,098	208,896	235,683	93,269	141,633	September
October	288,697	150,219	102,659	63,195	136,326	140,937	148,389	171,397	202,898	119,053	212,586	October
November	183,756	93,066	75,829	44,358	94,180	107,574	220,262	223,732	196,463	200,853	231,571	November
December	138,555	96,054	77,564	45,683	58,624	75,356	237,194	327,053	179,621	226,973	246,544	December
Total	3,880,206	2,625,979	1,908,141	1,096,399	1,493,794	1,888,557	2,743,908	3,404,497	3,483,752	1,891,021	2,653,377	Total

U. S. New Truck Registrations

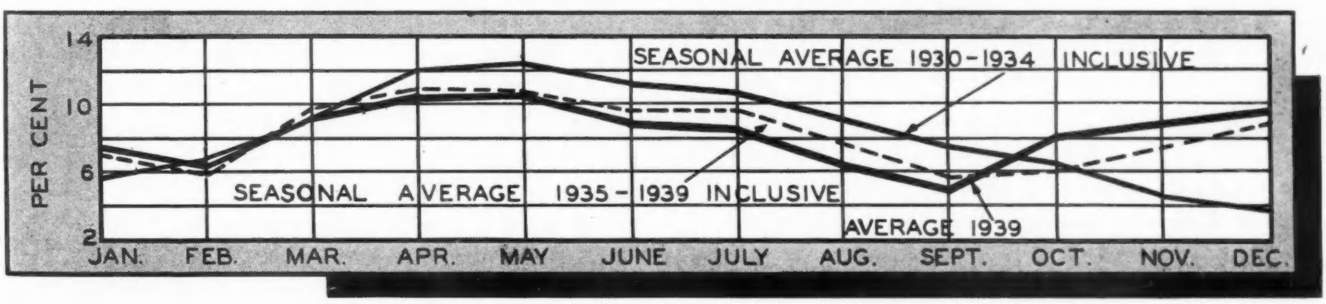
	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
January	29,900	30,236	24,415	14,776	11,709	22,903	34,759	43,760	47,618	31,995	37,715	January
February	32,637	31,880	23,466	14,558	9,707	24,476	34,797	40,301	41,843	27,551	34,102	February
March	46,368	42,199	30,609	16,874	9,934	33,884	41,511	52,428	60,301	37,255	45,083	March
April	56,299	47,029	36,848	17,784	17,301	38,882	46,785	64,956	67,832	35,682	46,063	April
May	52,874	43,286	33,496	18,696	20,925	39,831	47,968	62,183	65,857	32,937	45,381	May
June	45,114	33,531	28,496	17,876	23,254	34,768	48,243	56,851	58,626	30,647	40,482	June
July	57,943	39,904	30,102	14,731	30,642	37,490	51,243	63,695	61,686	33,475	44,747	July
August	52,557	33,787	27,070	15,081	28,799	40,790	50,355	59,222	60,872	34,231	43,523	August
September	46,560	33,933	25,967	14,967	31,269	37,225	41,390	54,611	54,711	26,570	32,983	September
October	49,899	34,237	24,685	15,156	28,058	40,878	37,439	41,220	40,246	19,589	37,923	October
November	33,631	22,012	15,553	10,392	18,691	28,689	36,935	30,255	27,248	23,943	41,286	November
December	23,275	18,665	13,177	9,522	15,580	24,070	39,258	42,162	31,409	31,474	37,460	December
Total	527,057	410,699	313,884	180,413	245,869	403,886	510,683	611,644	618,249	365,349	486,748	Total

Total U. S. New Passenger Car and Truck Registrations

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	
January	249,660	210,330	151,191	102,269	91,530	84,145	171,394	259,535	328,303	177,760	240,927	January
February	268,227	243,525	157,599	97,371	79,171	119,363	205,412	216,952	256,892	147,910	199,044	February
March	424,170	341,023	231,450	109,066	88,675	207,171	302,988	353,667	424,039	218,477	293,121	March
April	537,974	404,093	302,580	138,877	137,210	261,932	366,435	462,142	452,783	227,923	314,398	April
May	507,006	388,317	281,223	149,978	181,167	259,056	341,167	454,927	457,554	210,989	326,215	May
June	431,512	294,392	230,407	166,628	197,444	258,632	328,603	426,273	418,862	187,031	284,223	June
July	490,446	294,002	224,424	118,919	216,302	266,496	336,421	421,185	427,453	182,371	274,055	July
August	429,443	237,524	182,814	108,538	207,460	233,988	284,206	322,134	367,830	162,185	226,156	August
September	351,012	209,219	150,870	96,860	189,245	184,156	198,488	263,507	290,394	119,839	174,616	September
October	338,596	184,456	127,344	78,351	164,384	181,815	185,828	212,617	243,144	138,642	250,509	October
November	217,387	115,078	91,382	54,750	112,871	136,263	257,197	253,987	223,717	224,796	272,857	November
December	161,830	114,719	90,741	55,205	74,204	99,426	276,452	369,215	211,030	258,447	284,004	December
Total	4,407,263	3,036,678	2,222,025	1,276,812	1,739,663	2,292,443	3,254,591	4,016,141	4,102,001	2,256,370	3,140,125	Total

* Figures from R. L. Polk & Co.

Fall Shows Cause Two Sales Peaks



New Motor Vehicle Registrations by States*

	Passenger Cars			Trucks			Total New Motor Vehicles — Units			Total New Motor Vehicles — Per Cent of Total		
	1939	1938	1937	1939	1938	1937	1939	1938	1937	1939	1938	1937
Alabama	30,657	19,427	34,936	11,978	7,041	12,874	42,635	26,468	47,810	1.36	1.17	1.16
Arizona	8,191	6,738	12,562	2,478	2,051	3,659	10,669	8,789	16,221	.34	.39	.40
Arkansas	19,859	12,244	19,793	9,200	5,909	10,836	29,059	18,153	30,629	.93	.80	.75
California	187,720	148,011	246,075	25,656	23,846	36,901	213,376	171,857	282,976	6.80	7.62	6.90
Colorado	24,630	17,699	32,505	5,935	4,771	8,411	30,565	22,470	40,916	.97	1.00	1.00
Connecticut	38,859	26,283	51,268	5,466	4,422	7,767	44,325	30,705	59,035	1.41	1.36	1.44
Delaware	7,649	5,429	9,748	1,486	1,161	1,882	9,135	6,590	11,630	.29	.29	.28
District of Columbia	25,637	17,944	28,259	2,514	1,753	2,857	28,151	19,697	31,116	.90	.87	.76
Florida	42,462	26,102	43,445	9,375	6,540	10,722	51,837	32,642	54,167	1.65	1.45	1.32
Georgia	41,125	25,319	48,823	11,702	6,818	12,998	52,827	32,137	61,821	1.68	1.42	1.51
Idaho	9,890	6,883	14,139	3,346	2,613	4,454	13,236	9,496	18,593	.42	.42	.45
Illinois	193,235	133,914	250,205	25,353	18,055	30,451	218,588	151,969	280,656	6.96	6.74	6.84
Indiana	84,494	56,339	123,971	16,857	9,899	18,269	101,351	66,238	142,240	3.23	2.95	3.47
Iowa	59,666	47,489	68,196	12,245	8,940	12,449	71,911	56,429	80,645	2.29	2.50	1.97
Kansas	34,687	27,301	56,315	7,079	7,960	12,409	41,766	35,261	68,724	1.33	1.56	1.67
Kentucky	30,806	22,906	41,391	8,908	7,244	11,597	39,714	30,150	52,988	1.26	1.34	1.29
Louisiana	32,580	24,842	34,084	8,185	6,155	10,111	40,765	30,997	44,195	1.30	1.37	1.08
Maine	14,204	11,038	20,048	4,317	3,315	5,658	18,521	14,353	25,706	.59	.64	.63
Maryland	39,389	27,331	46,371	6,307	4,741	7,763	45,696	32,072	54,134	1.46	1.42	1.32
Massachusetts	92,480	63,682	115,603	12,931	9,459	16,235	105,411	73,141	131,838	3.36	3.24	3.21
Michigan	163,017	87,184	241,156	17,704	11,268	24,549	180,721	98,452	265,705	5.76	4.36	6.48
Minnesota	60,771	52,667	82,874	10,528	8,674	13,555	71,299	61,341	96,429	2.27	2.72	2.35
Mississippi	22,302	13,670	22,646	8,472	5,826	11,176	30,774	19,496	33,822	.98	.86	.82
Missouri	76,705	55,543	89,965	16,338	11,718	19,170	93,043	67,261	109,135	2.96	2.98	2.66
Montana	13,523	10,154	18,062	4,561	4,112	5,044	18,084	14,266	23,106	.58	.63	.56
Nebraska	25,715	22,319	33,640	5,449	4,664	6,202	31,164	26,983	39,842	.99	1.20	.97
Nevada	3,282	2,576	4,767	876	731	1,167	4,158	3,307	5,934	.13	.15	.14
New Hampshire	10,328	7,062	12,961	2,748	1,759	3,022	13,076	8,821	15,983	.42	.39	.39
New Jersey	96,049	70,764	122,103	12,725	11,591	18,446	108,774	82,355	140,549	3.46	3.65	3.43
New Mexico	8,315	6,393	10,781	3,732	2,911	5,089	12,047	9,304	15,870	.38	.41	.39
New York	264,287	194,049	329,951	32,109	26,656	41,922	296,396	220,705	371,873	9.44	9.78	9.07
North Carolina	46,160	33,922	55,341	12,867	9,309	15,691	59,027	43,231	71,032	1.88	1.92	1.73
North Dakota	9,805	8,620	12,060	2,740	2,483	3,193	12,545	11,083	15,253	.40	.49	.37
Ohio	167,526	105,439	250,192	22,536	15,261	28,440	190,062	120,700	278,632	6.05	5.35	6.79
Oklahoma	39,627	34,343	51,580	10,198	8,956	14,702	49,825	43,299	66,282	1.59	1.92	1.62
Oregon	25,574	18,769	35,915	5,873	4,064	7,859	31,447	22,833	43,774	1.00	1.01	1.07
Pennsylvania	196,201	140,332	293,909	28,915	21,044	39,150	225,116	161,376	333,059	7.17	7.15	8.12
Rhode Island	16,306	10,483	20,500	2,283	1,531	2,749	18,589	12,014	23,249	.59	.53	.57
South Carolina	25,100	15,748	26,959	6,431	4,305	7,257	31,531	20,053	34,216	1.00	.89	.83
South Dakota	10,589	7,911	12,728	2,752	2,003	2,659	13,341	9,914	15,387	.42	.44	.38
Tennessee	37,468	24,973	42,320	9,732	6,476	10,799	47,200	31,449	53,119	1.50	1.39	1.29
Texas	132,313	103,817	150,093	33,426	25,882	40,905	165,739	129,699	190,998	5.28	5.76	4.66
Utah	10,038	7,045	14,358	3,034	1,984	3,298	13,072	9,029	17,656	.42	.40	.43
Vermont	6,666	4,687	8,799	2,076	1,228	2,444	8,742	5,915	11,243	.28	.26	.27
Virginia	42,172	31,204	50,768	10,391	7,906	12,928	52,563	39,110	63,696	1.67	1.73	1.55
Washington	33,316	23,935	49,699	7,149	5,416	10,222	40,465	29,351	59,921	1.29	1.30	1.46
West Virginia	22,955	16,483	35,679	6,604	4,694	9,269	29,559	21,177	44,948	.94	.94	1.10
Wisconsin	61,873	48,872	97,214	10,949	8,516	16,412	72,822	57,398	113,653	2.32	2.54	2.77
Wyoming	7,174	5,136	8,968	2,232	1,708	2,627	9,406	6,844	11,595	.30	.30	.28
Total	2,653,377	1,891,021	3,433,752	486,748	365,349	618,249	3,140,125	2,256,370	4,102,001	100.00	100.00	100.00

* Data from R. L. Polk & Co.

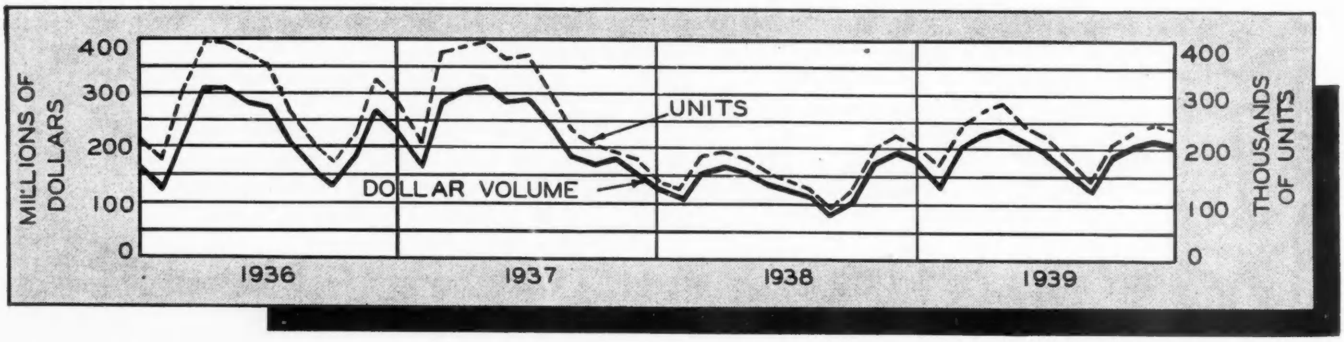
1939 New Car Retail Sales—$2,260,000,000

Month	1936 Units †	1936 Dollar ‡ Volume	1936 Average Price per Car	1937 Units †	1937 Dollar ‡ Volume	1937 Average Price per Car	1938 Units †	1938 Dollar ‡ Volume	1938 Average Price per Car	1939 Units †	1939 Dollar ‡ Volume	1939 Average Price per Car
January	215,771	$165,700,000	$768	280,350	$222,300,000	$768	145,663	$126,600,000	$869	203,175	$173,200,000	$852
February	176,646	134,300,000	760	214,834	167,800,000	781	120,261	104,400,000	868	164,808	129,800,000	788
March	301,256	231,000,000	767	363,477	286,200,000	787	181,037	157,200,000	868	247,930	210,400,000	849
April	397,103	306,300,000	771	385,187	305,300,000	793	192,086	166,800,000	868	268,284	226,900,000	846
May	391,542	301,200,000	769	391,608	309,900,000	791	177,951	154,300,000	866	280,800	237,700,000	846
June	368,469	281,700,000	765	360,159	285,100,000	792	156,290	135,600,000	867	243,601	205,600,000	844
July	356,815	271,800,000	762	365,783	288,200,000	788	148,798	128,400,000	863	229,271	192,000,000	837
August	262,709	202,000,000	769	307,285	244,600,000	796	127,955	110,100,000	860	182,598	153,700,000	842
September	208,517	159,800,000	766	231,851	187,600,000	809	93,165	79,700,000	856	141,578	121,900,000	861
October	170,959	135,500,000	793	202,471	168,000,000	830	118,957	105,700,000	888	212,541	188,100,000	885
November	222,787	180,800,000	812	196,133	176,200,000	898	200,802	172,300,000	857	231,553	204,200,000	882
December	326,697	263,200,000	806	179,687	157,900,000	879	226,832	193,200,000	851	246,520	216,500,000	878
Total	3,399,271	$2,633,300,000	$775	3,478,825	$2,799,100,000	$805	1,889,797	$1,634,300,000	$864	2,652,659	$2,260,000,000	$852

† The difference between the number of units shown here and those for new car registrations shown elsewhere is due to the cars grouped under "Miscellaneous" of which no account is taken in these calculations.

‡ All calculations are based on Delivered Price at Factory of the five-passenger, four-door sedan in conjunction with new car registrations of each model. For 1936, list price F.O.B. factory was used but adjusted to those of other years by considering List Price as 90 per cent of Delivered Price.

Dollar Volume Parallels Sales Volume



U. S. and WORLD REGISTRATIONS

World Motor Vehicle Registration by Years

	1932	1933	1934	1935	1936	1937	1938	1939
Africa	369,814	383,227	425,573	466,603	562,892	619,867	668,778	692,974
America (less U. S. A.)	1,896,380	1,827,754	1,860,135	1,917,676	2,001,459	2,105,190	2,106,867	2,309,100
Asia	486,292	506,925	546,201	597,601	625,718	666,719	666,550	695,738
Europe	5,498,704	6,052,758	6,656,012	7,136,425	7,791,665	8,455,577	9,039,555	9,463,293
Oceania	740,016	778,856	826,711	890,669	972,059	1,052,511	1,140,100	1,200,808
Total	8,991,206	9,549.520	10,314,632	11,008,974	11,953,793	12,899,864	13,621,850	14,361,913
United States †	24,341,822	23,849,932	24,881,467	26,225,757	28,091,709	29,649,270	29,158,615	30,180,224
World Total	33,333,028	33,399,452	35,196,099	37,234,731	40,045,502	42,549,134	42,780,465	44,542,137

† AUTOMOTIVE INDUSTRIES, all others The American Automobile (Overseas Edition).

U. S. Registrations Reach New High

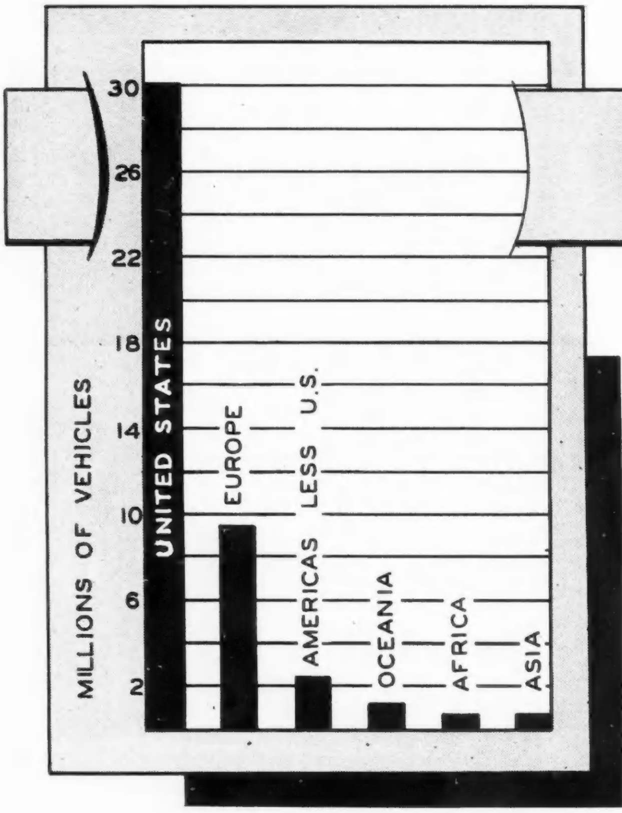
(As of December 31, 1939 and 1938)

	Passenger Cars*		Trucks		Buses		Total Registered Motor Vehicles		Per Cent Change	Per Cent of Total	
	1939	1938	1939	1938	1939	1938	1939	1938		1939	1938
Alabama	251,796	239,178	54,947	50,780	511	463	307,254	290,421	+6.0	1.02	.99
Arizona	106,095	105,447	24,000	22,998	350	346	130,445	128,791	+1.5	.43	.44
Arkansas	179,175	167,262	60,535	53,789	1,006	362	240,716	221,413	+9.0	.80	.76
California	2,295,292	2,339,208	(d) 309,855	170,483	(a)	(a)	2,605,147	2,509,691	+3.8	8.63	8.61
Colorado	312,847	303,377	30,636	31,447	(b)	1,093	343,483	335,917	+2.1	1.14	1.15
Connecticut	385,822	368,351	66,273	63,910	1,168	1,029	453,263	433,290	+4.6	1.50	1.49
Delaware	56,000	53,559	13,500	10,519	(a)	(a)	69,500	64,078	+8.4	.23	.22
District of Columbia	178,758	149,224	15,433	14,267	1,477	1,378	195,668	164,869	+18.7	.65	.57
Florida	379,868	350,222	76,320	71,871	1,031	928	457,219	423,021	+8.2	1.51	1.45
Georgia	336,002	357,642	85,520	76,154	2,716	2,583	474,238	436,379	+8.5	1.57	1.50
Idaho	120,000	109,616	30,000	27,809	......	......	150,000	137,425	+9.1	.50	.47
Illinois	1,626,689	1,567,775	232,888	222,582	(a)	(a)	1,859,577	1,790,357	+3.9	6.16	6.14
Indiana	810,000	793,969	126,000	122,168	1,165	1,149	937,165	917,286	+2.1	3.10	3.14
Iowa	670,080	650,133	93,139	92,884	(a)	(a)	763,219	743,017	+2.7	2.53	2.55
Kansas	477,000	476,241	100,000	97,744	......	......	577,000	573,985	+0.8	1.91	1.97
Kentucky	367,215	346,940	69,629	63,373	666	648	437,510	410,961	+6.2	1.45	1.41
Louisiana	263,942	250,671	84,475	80.167	(c) 5,101	(b)	353,518	330,838	+7.0	1.17	1.13
Maine	156,000	153,861	43,000	42,663	179	166	199,179	196,690	+1.3	.66	.67
Maryland	364,064	339,986	58,027	53,926	1,064	1,009	423,155	394,921	+7.2	1.40	1.35
Massachusetts	761,363	733,759	106,624	104,134	4,841	4,715	872,828	842,608	+3.7	2.88	2.89
Michigan	1,031,175	1,035,840	90,796	113,631	(a)	(a)	1,121,971	1,149,471	−2.0	3.72	3.94
Minnesota	721,217	705,019	118,227	115,970	256	252	839,700	821,241	+2.2	2.78	2.82
Mississippi	164,000	161,015	55,000	51,486	2,700	2,694	221,700	215,195	+3.0	.73	.74
Missouri	734,894	702,941	142,200	133,661	......	516	877,094	837,118	+4.9	2.91	2.87
Montana	135,839	130,188	44,480	41,138	(a)	(a)	180,319	171,326	+5.2	.60	.59
Nebraska	343,000	342,646	67,000	66,988	280	280	410,280	409,914	....	1.36	1.40
Nevada	32,863	30,695	8,038	7,525	......	204	40,901	38,424	+6.6	.14	.13
New Hamsphire	101,000	97,635	25,400	23,597	(a)	(a)	126,400	121,232	+4.1	.42	.42
New Jersey	881,727	862,899	132,819	132,714	4,991	5,069	1,019,537	1,000,682	+1.9	3.38	3.43
New Mexico	93,153	92,262	28,488	26,915	(b)	(b)	121,641	119,177	+2.0	.40	.41
New York	2,309,519	2,241,548	315,818	327,474	(e) 8,948	(c)33,942	2,634,285	2,602,964	+1.3	8.73	8.93
North Carolina	477,588	449,186	81,068	74,211	931	843	559,587	524,240	+6.8	1.85	1.80
North Dakota	142,384	141,111	34,544	33,061	139	84	177,067	174,256	+1.7	.59	.60
Ohio	1,702,761	1,655.651	184,223	177,314	(a)	(a)	1,886,984	1,832,965	+3.0	6.24	6.29
Oklahoma	453,914	438,874	95,790	92,943	(c) 2,244	(c) 2,204	551,948	534,021	+3.5	1.83	1.83
Oregon	305,943	296,837	62,749	59,829	638	655	369,330	357,321	+3.4	1.22	1.22
Pennsylvania	1,824,567	1,743,842	269,062	255,654	5,605	5,451	2,099,234	2,004,947	+4.9	6.96	6.88
Rhode Island	154,824	149,715	20,526	20,101	452	411	175,802	170,227	+3.3	.58	.58
South Carolina	256,574	237,857	44,142	41,379	(b)	(b)	300,716	279,236	+7.6	1.00	.96
South Dakota	158,821	152,040	30,282	28,494	103	98	189,206	180,632	+5.1	.63	.62
Tennessee	341,250	336,900	64,039	61,724	(c) 2,203	(b)	407,492	398,624	+2.1	1.35	1.37
Texas	1,281,566	1,186,022	335,467	316,757	832	876	1,617,865	1,503,655	+7.5	5.36	5.16
Utah	110,899	120,530	21,204	22,432	733	710	132,836	143,672	−7.5	.44	.49
Vermont	81,041	78,265	9,576	9,042	96	95	90,713	87,402	+4.0	.30	.30
Vriginia	383,222	366,504	68,723	66,410	798	672	452,743	433,586	+4.3	1.50	1.49
Washington	443,475	439,232	84,150	83,204	583	912	528,208	523,348	+1.0	1.75	1.79
West Virginia	221,182	215,784	46,537	43,785	632	589	268,351	260,158	+3.2	.89	.89
Wisconsin	702,625	700,865	141,590	135,413	616	580	844,831	836,858	+1.0	2.80	2.87
Wyoming	65,309	62,901	18,030	17,589	(b)	275	83,399	80,765	+3.2	.28	.28
TOTAL	25,804,340	25,031,225	4,320,829	4,054,109	55,055	73,281	30,180,224	29,158,615	+3.4	100.00	100.00

* Includes taxicabs.
(a) Included with trucks.
(b) Included with passenger cars.
(c) Includes taxicabs.
(d) Includes 127,030 light commercial vehicles registered as passenger cars.
(e) Not comparable with 1938 as 21,744 taxicabs are included with passenger cars.
— Indicates decrease.

For State Gasoline Taxes and Registration Fees see page 183

U. S. and World



Motorcycle and Trailer Registrations

(As of December 31, 1939 and 1938)

	Motorcycles 1939	Motorcycles 1938	Trailers and Semi-Trailers 1939	Trailers and Semi-Trailers 1938
Alabama	892	816	4,031	3,890
Arizona	450	452	4,600	4,567
Arkansas	570	517	11,328	10,162
California	13,247	11,802	155,304	142,268
Colorado	1,355	1,271	1,574	1,422
Connecticut	2,008	1,883	(b) 6,010	(b) 5,356
Delaware	250	231	2,900	2,772
District of Columbia	738	622	807	809
Florida	1,637	1,496	19,195	17,324
Georgia	1,593	1,233	13,994	12,684
Idaho	650	548	21,000	18,172
Illinois	7,227	6,194	25,296	23,073
Indiana	4,600	4,543	64,000	62,914
Iowa	2,753	2,558	(c) 92,207	(c) 87,447
Kansas	1,395	1,084	6,750	6,728
Kentucky	1,181	1,116	....	....
Louisiana	1,366	1,020	15,254	14,586
Maine	850	834	11,000	10,144
Maryland	1,564	1,460	4,635	4,208
Massachusetts	907	765	14,584	13,122
Michigan	4,621	4,294	143,574	141,647
Minnesota	2,324	2,226	33,459	31,033
Mississippi	335	318	1,800	1,771
Missouri	2,299	1,792	34,317	33,368
Montana	503	456	4,195	2,953
Nebraska	1,200	1,125	42,000	41,294
Nevada	142	109	1,366	1,218
New Hampshire	925	896	5,623	4,767
New Jersey	4,728	4,767	7,585	7,276
New Mexico	417	357	2,762	2,575
New York	11,852	10,391	46,846	40,771
North Carolina	1,791	1,705	44,850	42,317
North Dakota	284	296	984	849
Ohio	8,935	9,073	134,174	105,249
Oklahoma	1,095	1,090	36,700	36,498
Oregon	1,693	1,531	(a)	(a)
Pennsylvania	11,616	10,561	31,855	26,225
Rhode Island	834	704	703	631
South Carolina	1,080	1,011	4,668	5,396
South Dakota	455	436	21,838	19,080
Tennessee	1,664	1,502	(a)	(a)
Texas	4,562	3,980	54,514	50,944
Utah	507	428	578	569
Vermont	482	450	2,026	1,853
Virginia	2,000	1,743	(b) 9,545	(b) 9,350
Washington	2,125	2,025	20,500	17,826
West Virginia	982	1,212	(b) 2,889	(b) 3,058
Wisconsin	3,419	3,346	5,783	5,047
Wyoming	291	272	10,808	10,209
Total	118,394	108,541	1,180,411	1,085,422

(a) Included with trucks. (b) Includes tourist trailers.
(c) Includes about 63,000 light trailers registered without charge

U. S. Motor Vehicle Registrations by Years

	Passenger Cars	Trucks and Buses	Total Motor Vehicles	Per Cent Increase
1895	4	....	4	....
1896	16	....	16	....
1897	90	....	90	....
1898	800	....	800	....
1899	3,200	....	3,200	....
1900	8,000	....	8,000	....
1901	14,800	....	14,800	....
1902	23,000	....	23,000	....
1903	32,920	....	32,920	....
1904	54,590	410	55,000	....
1905	77,400	600	78,000	42
1906	105,900	1,100	107,000	37
1907	140,300	1,700	142,000	33
1908	194,400	3,100	197,500	39
1909	305,950	6,050	312,000	58
1910	458,500	10,000	468,500	50
1911	619,500	20,000	639,500	36
1912	902,600	41,400	944,000	48
1913	1,194,262	63,800	1,258,062	33
1914	1,625,739	85,600	1,711,339	36
1915	2,309,666	136,000	2,445,666	43
1916	3,297,996	215,000	3,512,996	44
1917	4,657,340	326,000	4,983,340	42
1918	5,621,617	525,000	6,146,617	23
1919	6,771,074	794,372	7,565,446	23
1920	8,225,859	1,006,082	9,231,941	22
1921	9,346,195	1,118,520	10,464,715	13
1922	10,864,128	1,375,725	12,239,853	17
1923	13,479,608	1,612,569	15,092,177	23
1924	15,460,649	2,134,724	17,595,373	17
1925	17,496,420	2,440,854	19,937,274	13
1926	19,237,171	2,764,222	22,001,393	10
1927	20,219,224	2,914,019	23,133,243	5
1928	21,379,125	3,113,999	24,493,124	6
1929	23,121,589	3,379,854	26,501,443	8
1930	23,183,241	3,473,831	26,657,072	0.2
1931*	22,567,381	3,426,515	25,993,896	−2.5
1932*	21,139,092	3,202,730	24,341,822	−6.4
1933*	20,557,493	3,292,439	23,849,932	−2.0
1934*	21,535,199	3,346,268	24,881,467	4.3
1935*	22,630,715	3,595,042	26,225,757	5.2
1936*	24,161,820	3,929,889	28,091,709	7.2
1937*	25,476,786	4,172,484	29,649,270	5.6
1938*	25,031,225	4,127,390	29,158,615	−1.7
1939*	25,804,340	4,375,884	30,180,224	3.4

* Automotive Industries count, all others Bureau of Public Roads.

U. S. Registrations 68% of World

	Motor Vehicles	Cars *	Trucks*	Buses*	Motor-cycles*
Africa	692,974	543,740	140,099	5,750	52,293
Americas (less U. S. A.)	2,309,100	1,785,842	498,077	25,181	27,488
Asia	695,738	427,083	234,337	32,218	101,441
Europe	9,463,293	6,704,286	2,511,122	150,885	2,771,112
Oceania	1,200,808	887,409	312,799	**	95,234
Total	14,361,913	10,348,360	3,696,434	214,034	3,047,568
United States †	30,180,224	25,804,340	4,320,829	55,055	118,394
World Total, 1939	44,542,137	36,152,700	8,017,263	269,089	3,165,962
World Total, 1938	42,780,465	34,898,176	7,439,568	364,246	2,895,345

† Automotive Industries count. All others The American Automobile (Overseas Edition).
** Included with trucks. * Incomplete for all territories.

REGISTRATIONS

By Special Arrangement with the American Automobile (Overseas Edition)

The AMERICAS

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Alaska	4,056	2,209	1,847	†	28
Antigua	314	249	65	†	21
Argentina	292,400	208,944	83,456	†	2,000
Bahamas	1,600	1,200	400	†	45
Barbados	2,754	2,171	469	114	87
Bermuda	68	2	58	8	.....
Bolivia	2,160	957	1,064	139	.....
Brazil	165,131	102,452	58,075	4,604	1,630
British Guiana	1,891	1,459	432	†	228
British Honduras	250	135	115	†	2
Canada	1,420,924	1,182,560	235,632	2,732	12,265
Chile	48,499	32,915	13,803	1,781	815
Colombia	33,189	18,554	11,635	3,000	319
Costa Rica	4,002	2,379	1,140	483	345
Cuba	47,700	28,900	18,800	†	325
Dominica	93	67	26	†	14
Dominican Republic	2,650	1,750	900	†	180
Dutch Guiana	271	220	50	1	109
Ecuador	3,602	1,656	1,580	366	82
French Guiana	347	146	201	†	6
Grenada	560	406	160	.....	.....
Guadeloupe	2,250	1,775	405	70	90
Guatemala	4,115	2,361	1,125	629	615
Haiti	2,427	1,992	435	†	60
Honduras	1,371	665	692	14	8
Jamaica	11,792	8,929	2,715	148	297
Martinique	2,975	2,320	555	100	120
Mexico	105,470	80,000	19,020	6,450	4,000
Montserrat	112	87	25	†	4
Neth. West Indies	4,365	3,054	882	429	190
Newfoundland	5,459	4,200	1,180	79	173
Nicaragua	803	574	208	21	76
Panama	13,105	10,906	1,648	551	60
Paraguay	2,150	1,100	900	150	.....
Peru	22,216	13,096	7,757	1,363	339
Puerto Rico	22,500	17,000	5,500	†	200
St. Kitts-Nevis	392	302	90	†	38
St. Lucia	158	116	42	†	21
St. Pierre-Miquelon	102	38	64	†	7
St. Vincent	291	224	67	†	24
Salvador	3,407	2,513	498	396	556
Trinidad and Tobago	8,922	5,729	3,193	†	1,000
United States	30,180,224	25,804,340	4,320,829	55,055	118,394
Uruguay	28,058	21,069	6,989	.....	.....
Venezuela	33,024	17,635	13,847	1,542	1,100
Virgin Islands	825	557	257	11	9
West Indies (Others)	350	275	75	.....	.....
**Total, 1939	2,309,100	1,785,842	498,077	*25,181	*27,488
Total, 1939	32,489,324	27,590,182	4,818,906	*80,236	*145,832
Total, 1938 (Revised)	31,374,958	26,776,845	4,489,529	*108,584	*133,811
**Total, 1938 (Revised)	2,106,867	1,652,897	425,923	*28,047	*20,432

† Included with trucks. * Not complete for all territories. ** Not including United States.

AFRICA

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Algeria	70,000	60,000	8,000	2,000	4,400
Angola	3,250	1,250	1,950	50	235
Basuteland	725	550	175	.....	.....
Bechuanaland	600	400	200	.....	.....
Belgian Congo	6,652	3,172	3,480	.....	1,615
British East Africa	28,417	17,189	10,862	366	3,666
British Somaliland	1,133	491	380	262	12
British West Africa	16,000	7,000	9,000	.....	800
Canary Islands	2,000	.....	.....	.....	.....
Egypt	33,787	29,473	2,989	1,325	2,209
French Equatorial Afr.	1,265	527	738	.....	200
French West Africa	15,803	6,161	9,642	.....	1,265
French Somaliland	325	.....	.....	.....	15
Italian East Africa	22,940	16,419	6,460	61	965
Liberia	125	75	50	.....	.....
Madeira	1,230	800	290	140	20
Madagascar	7,444	5,214	2,178	52	2,802
Mauritius	2,780	2,212	430	138	225
Morocco	37,750	27,750	8,700	1,300	3,250
Myasaland	1,341	809	532	.....	323
Portuguese E. Africa	6,500	3,500	3,000	.....	775
Reunion Islands	1,500	1,100	400	.....	.....
Rhodesia	30,099	20,756	9,343	.....	2,354
Seuchelles	160	135	25	.....	90
South West Africa	4,500	3,100	1,400	.....	100
Spanish Morocco	1,060	.....	.....	.....	.....
Sudan	4,850	2,170	2,680	.....	.....
Swaziland	560	435	125	.....	.....
Tangier	673	572	90	11	32
Tripolitania	1,505	1,230	230	45	170
Tunisia	20,000	16,250	3,750	.....	1,770
Union of South Africa	368,000	315,000	53,000	.....	25,000
Total, 1939	692,974	*543,740	*140,099	*5,750	*52,293
Total, 1938 (Revised)	668,778	*530,119	*133,834	.....	*52,635

* Incomplete for all territories. † Included with trucks.

EUROPE

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Azores	880	740	140	†	125
Belgium	225,445	151,917	71,488	2,040	65,200
Bulgaria	4,500	2,750	1,750	†	1,500
Denmark	164,350	118,350	44,200	1,800	30,100
Eire	67,110	56,000	10,200	910	2,700
Estonia	6,559	3,672	2,600	287	3,558
Faroe Islands	91	19	72	†	6
France	2,268,985	1,817,641	451,344	†	.....
Finland	53,000	30,000	23,000	†	6,350
Germany	1,951,789	1,486,451	442,036	23,302	1,860,722
Gibraltar	1,155	925	190	40	.....
Great Britain	2,608,501	2,039,921	481,871	86,709	411,593
Greece	15,500	7,000	6,000	2,500	1,500
Holland	156,150	98,000	53,800	4,350	60,000
Hungary	25,200	19,500	5,000	700	1,100
Iceland	2,075	835	1,120	120	150
Italy	475,000	350,000	115,000	10,000	100,000
Latvia	6,687	3,399	2,946	342	3,357
Lithuania	3,116	2,026	770	320	2,717
Luxemburg	10,709	7,045	3,474	190	3,379
Malta	5,259	3,800	833	626	400
Monaco	2,000	1,500	500	†	150
Northern Ireland	50,000	38,000	12,000	†	2,900
Norway	99,777	61,126	35,118	3,533	20,876
Portugal	49,320	35,800	11,810	1,710	4,950
Rumania	29,000	20,000	5,500	3,500	2,500
Spain	70,000	.....	.....	.....	.....
Spitsbergen	2	1	1	.....	.....
Sweden	217,500	159,600	52,700	5,200	40,000
Switzerland	94,850	72,500	20,650	1,700	26,000
U. S. S. R. (Russia)	750,000	100,000	650,000	†	.....
Yugoslavia	21,873	15,768	5,009	1,006	11,279
Total, 1939	9,436,293	*6,704,286	*2,511,122	*150,885	*2,771,112
Total, 1938 (Revised)	9,093,555	*6,419,990	*2,362,482	*186,083	*2,510,877

* Not complete for all territories. † Included with trucks.

NOTE: Omitted in the European table above are totals for Albania, Czechoslovakia Danzig and Poland.

ASIA

	Motor Vehicles	Cars	Trucks	Buses	Motor-cycles
Afghanistan	2,400	400	2,000	†	.....
Arabia	1,120	862	136	122	23
Bahrain	467	316	71	80	18
British Malaya	45,063	32,873	9,945	2,245	3,500
Ceylon	28,044	21,102	4,307	2,635	3,000
China	44,750	23,750	13,500	7,500	.....
Chosen	9,500	2,600	3,900	3,000	1,800
Cyprus	2,100	.....	.....	.....	475
French Indo-China	20,000	16,000	4,000	†	750
Hongkong	5,000	4,000	1,000	†	300
India	185,000	132,500	52,500	†	11,417
Iran	11,152	3,772	7,380	†	250
Iraq	6,800	4,500	2,300	†	125
Japanese Empire	140,000	65,000	75,000	†	60,000
Macao	400	220	180	†	.....
Manchukuo	15,000	5,000	10,000	†	190
Netherlands E. Indies	76,144	53,592	13,514	9,038	14,110
Palestine	13,725	8,146	4,325	1,254	1,200
Philippine Islands	52,776	32,822	15,743	4,211	573
Syria	10,859	8,716	1,661	482	777
Thailand (Siam)	12,065	6,000	5,198	867	950
Trans Jordan	501	301	167	33	16
Turkey	12,872	4,611	7,510	751	1,967
Total, 1939	695,738	*427,083	*234,337	*32,218	101,441
Total, 1938 (Revised)	666,550	*413,268	*164,397	*76,835	101,958

* Not complete for all countries. † Included in trucks.

OCEANIA

	Motor Vehicles	Cars	Trucks-Buses	Motor-cycles
Australia	854,150	610,750	243,400	77,000
Cook Islands	84	41	43	5
Fiji Islands	2,027	1,186	841	91
French Oceania	526	367	159	80
Hawaii	63,260	51,000	12,260	.....
New Caledonia	1,116	965	151	174
New Zealand	278,214	222,626	55,588	17,749
Other Oceania	600	.....	.....	.....
Papua	500	325	175	35
Samoa	331	149	182	.....
Total 1939	1,200,808	*867,409	*312,799	*95,234
Total 1938 (Revised)	1,140,100	*850,677	*288,823	*100,902

* Not complete for all territories.

Passenger Car Representations by Makes—By Years*

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Buick	3,241	3,003	2,608	2,472	2,273	2,303	2,465	2,516	2,750	2,657	2,572
Cadillac-La Salle	722	700	654	602	563	541	649	648	803	695	710
Chevrolet	9,553	9,558	9,412	9,039	8,885	8,578	8,667	8,776	8,752	8,406	8,100
Chrysler	3,337	3,007	3,454	2,999	3,511	4,360	4,309	4,097	3,837	3,383	3,276
De Soto	1,133	1,369	1,234	1,252	1,359	1,880	3,406	2,888	2,926	2,688	2,512
Dodge	2,994	2,842	2,663	2,722	2,772	3,297	3,772	4,087	4,380	4,113	3,959
Ford	8,598	8,833	8,735	8,280	7,480	7,388	7,948	8,301	8,245	7,825	7,404
Graham	1,751	1,469	1,206	1,079	920	782	1,120	958	877	611	460
Hudson	3,488	2,863	2,270	1,761	1,842	2,641	3,023	3,263	3,390	2,681	2,436
Hupmobile	1,296	1,084	991	854	699	763	771	.....	302	191	.....
Lincoln-Zephyr	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,695	2,211
Mercury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,116
Nash	2,123	1,884	1,677	1,430	1,201	1,283	1,400	1,314	1,753	1,533	1,756
Oldsmobile	1,668	1,592	1,426	1,351	1,418	1,611	2,227	2,454	2,588	2,493	2,424
Packard	766	721	682	624	540	486	843	1,128	1,283	1,098	1,031
Plymouth	.....	7,218	7,351	6,276	7,642	9,537	11,487	11,072	11,143	10,184	9,747
Pontiac	4,545	3,435	2,887	2,503	2,336	2,314	2,791	3,413	4,006	3,411	3,439
Studebaker	2,242	1,971	1,999	1,927	1,733	1,986	1,832	2,080	2,335	1,873	2,480
Willys-Overland	4,751	3,783	2,904	2,739	.....	.....	.....	580	1,476	1,143	913
Total	52,218	55,332	52,153	47,910	45,174	49,750	56,710	57,575	60,846	56,680	57,546
Miscellaneous	10,836	7,409	7,020	5,527	4,854	3,852	3,046	1,779	2,289	366	488
Total Representations	63,054	62,741	59,173	53,437	50,028	53,602	59,756	59,354	63,135	57,046	58,034

*Chilton Trade List count as of January, 1940.
Note—The term "Passenger Car Representation" refers to retail outlets of any given make. A dealer organization often handles more than one make of passenger car.

Automotive Sales Outlets by States*

STATE	Total Registered Motor Vehicles 1939	WHOLESALERS: Number of Wholesalers	WHOLESALERS: Motor Vehicles Per Wholesaler	DEALERS: Passenger Car Dealers	DEALERS: Exclusive Truck Dealers	DEALERS: Total Truck Dealers	DEALERS: Total Car and Truck Dealers	DEALERS: Motor Vehicles Per Car and Truck Dealers	REPAIR SHOPS: Car Dealer Service Stations	REPAIR SHOPS: Independent Repair Shops	REPAIR SHOPS: Total Repair Shops	All Retail Outlets Duplications Eliminated	Motor Vehicles Per Retail Outlet	All Truck Fleets (8 or More Trucks)
Alabama	307,254	73	4,208	345	30	228	375	819	313	250	563	642	478	216
Arizona	130,445	30	4,348	150	7	83	157	830	143	151	294	317	411	85
Arkansas	240,716	79	3,047	388	26	256	414	581	376	419	795	810	297	124
California	2,605,147	502	5,189	1,944	145	1,254	2,089	1,247	1,771	5,163	6,934	7,448	349	1,655
Colorado	343,483	71	4,837	462	43	314	505	680	446	499	945	1,037	331	253
Connecticut	453,263	101	4,487	579	47	333	626	724	575	771	1,346	1,415	320	533
Delaware	69,500	13	5,346	64	6	41	70	992	71	107	178	171	406	90
District of Columbia	195,668	26	7,525	74	7	31	81	2,415	68	138	206	228	858	236
Florida	457,219	110	4,156	464	37	278	501	912	451	514	965	1,023	446	411
Georgia	474,238	92	5,154	513	27	355	540	878	470	313	783	857	553	332
Idaho	150,000	26	5,769	318	20	221	338	443	309	185	494	541	277	41
Illinois	1,859,577	396	4,695	2,366	146	1,494	2,512	740	2,280	2,845	5,125	5,422	342	1,869
Indiana	937,165	196	4,781	1,211	54	694	1,265	740	1,124	1,280	2,404	2,586	362	787
Iowa	763,219	160	4,770	1,473	148	1,018	1,621	470	1,382	1,321	2,703	2,971	256	365
Kansas	577,000	134	4,305	986	97	676	1,083	532	951	935	1,886	2,032	283	267
Kentucky	437,510	100	4,375	610	38	413	648	675	582	446	1,028	1,109	394	278
Louisiana	353,518	69	5,123	344	29	228	373	947	325	294	619	679	520	430
Maine	199,179	47	4,237	383	19	226	402	495	354	482	836	886	224	129
Maryland	423,155	78	5,425	437	24	192	461	917	425	514	939	1,037	408	434
Massachusetts	872,828	227	3,845	1,345	45	488	1,390	627	1,079	1,234	2,313	2,508	348	1,352
Michigan	1,121,971	236	4,754	1,695	62	1,145	1,757	638	1,657	1,776	3,433	3,760	298	..250
Minnesota	839,700	110	7,633	1,460	58	791	1,518	553	1,365	1,610	2,975	3,269	256	516
Mississippi	221,700	67	3,308	363	36	261	399	555	342	180	522	581	381	74
Missouri	877,094	186	4,715	971	71	692	1,042	842	928	1,451	2,379	2,539	345	769
Montana	180,319	43	4,193	376	42	295	418	431	380	277	657	710	253	103
Nebraska	410,280	91	4,508	742	57	527	799	513	725	844	1,569	1,649	248	187
Nevada	40,901	10	4,090	118	5	87	123	332	116	99	215	238	171	25
New Hampshire	126,400	25	5,056	257	14	150	271	466	245	273	518	554	228	86
New Jersey	1,019,537	177	5,760	1,045	70	524	1,115	914	1,016	1,791	2,807	3,016	338	1,177
New Mexico	121,641	23	5,288	176	9	122	185	657	142	139	281	336	362	39
New York	2,634,285	538	4,896	2,783	205	1,668	2,988	881	2,724	5,246	7,970	8,519	309	2,710
North Carolina	559,587	106	5,279	631	24	353	655	854	644	530	1,174	1,232	454	324
North Dakota	177,067	26	6,810	499	48	346	547	323	464	489	953	1,042	169	49
Ohio	1,886,984	354	5,330	2,181	112	1,220	2,293	822	2,074	2,265	4,339	4,870	387	1,512
Oklahoma	551,948	120	4,599	751	66	523	817	675	752	873	1,625	1,817	303	311
Oregon	369,330	74	4,990	440	29	299	469	787	415	849	1,264	1,343	275	231
Pennsylvania	2,099,234	411	5,107	3,016	182	1,876	3,198	656	3,047	3,948	6,995	7,543	278	2,224
Rhode Island	175,802	31	5,671	161	7	72	168	1,046	154	255	409	458	383	237
South Carolina	300,716	52,	5,783	368	18	201	386	779	340	222	562	613	490	185
South Dakota	189,206	33	5,733	436	39	325	475	398	412	363	775	847	223	60
Tennessee	407,492	97	4,200	390	33	271	423	963	398	409	807	902	451	363
Texas	1,617,865	329	4,917	1,935	194	1,368	2,129	759	1,915	2,827	4,742	5,139	314	910
Utah	132,836	41	3,239	175	17	133	192	691	155	219	374	423	314	133
Vermont	90,713	25	3,628	206	11	157	217	418	189	355	544	581	156	46
Virginia	452,743	79	5,730	645	30	242	675	670	618	724	1,342	1,426	317	353
Washington	528,208	131	4,032	694	55	466	749	705	669	1,222	1,891	2,080	253	425
West Virginia	268,351	78	3,440	466	31	302	497	539	458	371	829	896	299	272
Wisconsin	844,831	136	6,211	1,636	80	1,188	1,716	492	1,582	1,482	3,064	3,305	255	619
Wyoming	83,399	17	4,905	186	12	148	198	421	197	141	338	357	233	49
Total	30,180,224	6,176	4,886†	39,258	2,612	24,575	41,870	720†	37,618	49,091	86,709	93,764	321†	25,126

† Average. * Chilton Trade List count as of January, 1940.

Car Dealer Representations by States—By Makes*

STATES	Buick	Cadillac-La Salle	Chevrolet	Chrysler	De Soto	Dodge	Ford	Graham	Hudson-Terraplane	Lincoln-Zephyr	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	Miscellaneous	Total
Alabama	19	5	97	26	22	32	92	.....	17	10	1	14	13	7	80	21	9	7	4	476
Arizona	11	7	30	9	12	19	28	2	9	7	2	14	12	4	40	13	14	4	5	242
Arkansas	23	4	111	30	19	37	96	2	13	4	.....	9	17	6	86	29	21	2	4	513
California	156	48	310	139	133	207	328	44	105	285	208	76	154	73	479	176	165	72	35	3,193
Colorado	30	8	94	43	21	43	100	3	34	13	43	20	25	8	107	40	36	5	5	678
Connecticut	40	18	89	54	50	59	73	19	38	36	27	33	38	22	163	55	38	17	13	882
Delaware	5	4	14	3	6	6	12	.....	4	4	4	2	5	1	15	8	8	1	1	103
District of Columbia	2	2	9	6	8	8	16	1	6	10	5	1	5	4	22	5	3	3	7	123
Florida	22	17	88	41	18	49	103	4	26	34	5	14	28	20	108	41	38	18	10	684
Georgia	24	6	140	38	23	58	137	.....	17	16	15	12	23	11	119	30	27	9	7	712
Idaho	20	3	64	23	23	33	57	4	34	10	20	15	21	6	79	24	27	4	2	469
Illinois	194	31	455	177	158	221	415	33	144	132	68	157	145	71	556	194	158	63	17	3,389
Indiana	96	22	233	93	86	109	197	12	105	77	60	63	88	29	288	109	94	37	13	1,811
Iowa	105	13	409	121	72	134	322	10	84	82	163	49	82	21	327	122	89	19	7	2,231
Kansas	62	8	247	84	59	84	223	2	68	40	62	36	55	9	227	87	45	13	2	1,413
Kentucky	52	7	119	59	33	73	124	5	32	24	45	23	52	13	165	65	33	12	5	941
Louisiana	22	2	83	33	13	33	82	1	20	15	17	7	20	7	79	19	14	5	7	479
Maine	19	9	85	28	23	32	69	8	31	1	2	25	18	8	83	40	18	7	3	509
Maryland	26	12	64	46	37	57	75	5	24	43	46	18	32	19	140	39	23	10	6	722
Massachusetts	62	41	171	92	92	117	164	25	82	30	23	69	92	46	301	123	72	25	18	1,645
Michigan	121	33	354	126	86	169	301	24	156	73	111	81	117	46	381	180	92	37	37	2,525
Minnesota	102	6	350	137	90	152	295	13	83	13	9	65	59	25	379	109	99	37	7	2,030
Mississippi	15	5	106	31	17	37	93	.....	7	14	14	7	13	7	85	28	24	.....	2	505
Missouri	50	8	270	77	70	91	194	4	27	38	34	37	44	20	238	68	57	19	7	1,353
Montana	20	4	86	32	11	45	82	.....	27	11	13	20	19	10	88	26	37	4	4	539
Nebraska	44	5	199	79	40	66	172	3	35	21	55	22	25	6	185	53	49	12	3	1,074
Nevada	11	1	22	9	6	12	27	2	8	8	5	10	6	1	27	15	11	4	4	189
New Hampshire	16	6	47	18	13	30	53	3	17	2	6	12	13	10	61	24	20	4	1	356
New Jersey	66	36	164	90	87	107	165	22	55	78	65	61	75	33	284	105	62	33	19	1,607
New Mexico	14	4	42	19	9	19	37	1	7	11	10	3	13	7	47	18	12	1	4	278
New York	177	76	437	233	196	315	444	40	187	231	191	134	208	108	744	273	176	99	47	4,316
North Carolina	50	14	145	61	28	58	149	.....	41	19	11	9	38	15	147	71	27	7	7	897
North Dakota	26	4	145	43	24	49	134	1	39	5	13	10	16	3	116	15	23	6	6	678
Ohio	142	35	405	178	182	211	362	46	182	91	85	117	144	66	571	188	124	68	19	3,216
Oklahoma	43	12	182	51	36	75	173	1	37	58	90	19	50	12	162	96	27	6	5	1,135
Oregon	24	8	99	33	36	45	76	9	21	44	41	25	27	7	114	41	21	10	3	684
Pennsylvania	199	67	494	291	225	298	455	55	190	219	113	187	208	111	814	268	233	90	42	4,559
Rhode Island	9	6	22	18	14	17	15	1	15	9	10	11	11	8	49	16	17	1	3	252
South Carolina	29	9	91	36	18	38	85	1	14	12	.....	9	19	9	92	31	23	7	3	526
South Dakota	23	4	122	44	29	41	110	1	13	6	56	12	16	4	114	19	26	4	1	645
Tennessee	16	4	95	34	25	46	85	1	15	14	9	9	20	7	105	32	29	1	7	554
Texas	126	33	445	179	111	207	395	8	120	60	78	35	117	28	497	160	106	24	24	2,751
Utah	10	3	33	11	16	17	41	3	16	6	15	6	10	3	44	10	18	4	2	268
Vermont	12	7	40	16	11	27	39	2	13	7	13	11	13	8	54	24	14	8	.....	319
Virginia	38	11	145	59	34	70	150	6	28	18	7	8	32	21	163	65	23	16	5	899
Washington	39	12	126	48	49	78	130	8	42	40	43	30	57	15	175	64	46	23	10	1,035
West Virginia	30	9	95	41	32	48	81	6	28	17	6	24	28	16	121	39	31	16	7	675
Wisconsin	116	18	388	121	96	155	311	20	108	199	181	117	90	36	372	146	108	37	38	2,657
Wyoming	14	3	39	16	13	25	37	1	12	14	16	8	11	4	54	15	13	2	.....	297
TOTAL	2,572	710	8,100	3,276	2,512	3,959	7,404	460	2,436	2,211	2,116	1,756	2,424	1,031	9,747	3,439	2,480	913	488	58,034

* Chilton Trade List count as of January, 1940.

Car Dealer Representation By Makes—By Population Groups*

MAKE	Population Division 0-1,000	1,000-2,500	2,500-5,000	5,000-10,000	10,000-25,000	25,000-50,000	50,000-100,000	Over 100,000	Exclusive Dealers	Dealers Handling this Make and One or More Other Makes	Total Dealer Representation
Buick	259	470	494	462	464	153	96	174	1,286	1,286	2,572
Cadillac-La Salle	10	23	62	107	215	106	81	106	122	588	710
Chevrolet	2,983	2,082	1,066	688	549	186	127	419	6,729	1,371	8,100
Chrysler	613	686	520	444	455	164	98	296	....	3,276	3,276
De Soto	464	385	348	352	391	156	96	320	....	2,512	2,512
Dodge	770	835	685	561	505	173	107	323	.....	3,959	3,959
Ford	2,418	1,971	1,001	678	533	183	137	483	4,336	3,068	7,404
Graham	38	25	33	52	91	69	44	108	292	168	460
Hudson-Terraplane	401	391	344	308	367	153	119	353	1,966	470	2,436
Lincoln-Zephyr	368	412	333	293	320	122	78	285	....	2,211	2,211
Mercury	436	479	338	254	241	93	65	210	.....	2,116	2,116
Nash	205	210	231	264	323	149	109	265	1,410	346	1,756
Oldsmobile	221	440	480	411	399	155	97	221	1,165	1,259	2,424
Packard	36	62	111	168	277	133	81	163	567	464	1,031
Plymouth	1,847	1,906	1,553	1,357	1,351	493	301	939	....	9,747	9,747
Pontiac	460	756	635	541	475	174	111	287	2,320	1,119	3,439
Studebaker	337	365	378	367	440	182	104	307	1,972	508	2,480
Willys	122	121	102	104	149	85	57	173	472	441	913
Miscellaneous	47	35	44	39	65	52	58	148	110	378	488
Summary	12,035	11,654	8,758	7,450	7,610	2,981	1,966	5,580	22,747	35,287	58,034
Per Cent of Total	20.73%	20.08%	15.09%	12.84%	13.11%	5.14%	3.39%	9.62%	....	....	100.00%

* Chilton Trade List count as of January, 1940.

1940 AMERICAN

Line Number	Car Make and Model	Wheelbase (In.)	Overall Length (In.)	Tread (In.) Front	Tread (In.) Rear	Tire Size (In.)	Shipping Weight—Lowest Delivered Price 5 Pass., 4-Door Sedan	Lowest Delivered Price 5 Pass., 4-Door Sedan	ENGINE: No. of Cylinders, Bore and Stroke (In.)	Taxable Hp.	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M.	Maximum Torque (Lb.-Ft.) at Specified R.P.M.	Comp'n Ratio (to-1) Standard	Comp'n Ratio (to-1) Optional	Cylinder Head Material	Comp'n Pressure (Lb.) Pressure	Comp'n Pressure (Lb.) At What R.P.M.	Weight per Cu. In. 5 Pass., 4-Door Sedan ♦	Weight per Hp. 5 Pass., 4-Door Sedan ♦	Hp. per Cu. In.	Displacement Factor ††	Crankshaft † Revolutions per Mile
1	Bantam 65	75	129½	39 15/16	42½	4.00/15	1255	$ 399	4-2.26x3⅛	8.2	50.1	22-3800	35-1800	7.40	No	CI	135	200	35.02	79.77	.44	....	4735
2	Buick-Special 40	121	203 13/16	58 7/32	59 5/32	6.50/16	3660	996	8-3 3/32x4⅛	30.6	248.0	107-3400	203-2000	6.10	....	CI	112	Cra	16.77	38.87	.43	37.0	3190
3	Buick-Super 50	121	208 13/16	58 7/32	59 5/32	6.50/16	3790	1109	8-3 3/32x4⅛	30.6	248.0	107-3400	203-2000	6.10	....	CI	112	Cra	17.29	40.09	.43	35.8	3190
4	Buick-Century 60	126	208 11/16	58 23/32	59 21/32	7.00/15	3935	1211	8-3 7/16x4 5/16	37.8	320.2	141-3600	269-2000	6.25	....	CI	114	Cra	13.85	31.45	.44	39.8	2839
5	Buick-Roadmaster 70	126	213 9/16	58 23/32	59 21/32	7.00/15	4045	1359	8-3 7/16x4 5/16	37.8	320.2	141-3600	269-2000	6.25	....	CI	114	Cra	14.19	32.23	.44	38.8	2839
6	Buick-Limited 80	133	219	59 7/16	62½	7.50/16	4400	1553	8-3 7/16x4 5/16	37.8	320.2	141-3600	269-2000	6.25	....	CI	114	Cra	15.30	34.75	.44	36.3	2847
7	Buick-Limited 90	140	225¼	59 7/16	62½	7.50/16	4590	1942	8-3 7/16x4 5/16	37.8	320.2	141-3600	269-2000	6.25	....	CI	114	Cra	15.89	36.09	.44	37.6	3076
8	Cadillac-V8 60S	127	216⅞	58	61	7.00/16	4070	2090	8-3½x4½	39.2	346.0	135-3400	250-1700	6.25	....	CI	155	1000	13.20	33.85	.39	40.1	2748
9	Cadillac-V8 62	129	215 13/16	58	59	7.00/16	4030	1745	8-3½x4½	39.2	346.0	135-3400	250-1700	6.25	....	CI	155	1000	13.09	33.55	.39	40.5	2748
10	Cadillac-V8 72	139	227 1/16	58	62½	7.50/16	4670	2670	8-3½x4½	39.2	346.0	140-3400	270-1700	6.70	....	CI	170	1000	14.94	36.92	.40	38.0	2914
11	Cadillac-V8 75	141	228 9/16	60½	62½	7.50/16	4900	2995	8-3½x4½	39.2	346.0	140-3400	270-1700	6.70	....	CI	170	1000	15,60	38.57	.40	38.6	3096
12	Cadillac-V16 90	141	225 11/16	60½	62½	7.50/16	5190	5140	16-3¼x3¼	67.6	431.0	185-3600	324-1700	6.75	....	CI	180	1000	13.20	30.75	.43	43.1	2914
13	Chevrolet-Master 85	113	192¼	56⅜	59	6.00/16	2930	740	6-3½x3¾	29.4	216.5	85-3400	170-1200	6.25	No	CI	....	....	15.84	40.35	.39	34.0	2780
14	Chevrolet Spec.DeL.&Mas.DeL.	113	192¼	57⅝	59	6.00/16	2990	766	6-3½x3¾	29.4	216.5	85-3400	170-1200	6.25	No	CI	....	....	16.12	41.05	.39	36.8	3067
15	Chrysler Windsor & Royal C-25	122½	202½	57	60 9/32	6.25/16	3175	995	6-3⅜x4½	27.3	241.5	108-3600	188-1200	6.50	7.00	CI°	145	1000	15.21	34.02	.45	36.6	2870
16	Chrysler Saratoga & N. Y. C-26	128½	208½	57 27/32	61 9/16	7.00/15	3590	1180	8-3¼x4⅞	33.8	323.5	135-3400	255-1600	6.80	7.45	CI°	155	1000	12.64	30.29	.42	43.7	2846
17	Chrysler Crown Imp. C-27	145½	225½	57 27/32	61⅞	7.50/15	....	2245	8-3¼x4⅞	33.8	323.5	137-3400	260-1600	6.80	7.45	Al	155	1000	....	....	.42	39.9	3285
18	Crosley A	80	120	40	40	4.25/12	950	362(1)	2-3x2¾	7.2	38.8	15-4200	22-2400	5.50	....	CI	90	Cra	37.37	96.66	.39	....	5191
19	De Soto Custom S-7	122½	202¼	57	60 9/32	6.00/16	3086	945	6-3⅜x4¼	27.3	228.1	100-3600	176-1200	6.50	7.00	CI°	150	1000	15.72	35.86	.44	37.6	3055
20	Dodge DeL. & Spec. D14-17	119½	198¼	57	60 9/32	6.00/16	2997	855	6-3¼x4⅜	25.3	217.8	87-3600	166-1200	6.50	....	CI	145	1000	16.05	40.19	.40	36.8	3055
21	Ford V8-60	112	190⅞	55¾	58¼	5.50/16	2696	685(1)	8-2.6x3.2	21.6	136.0	60-3500	94-2500	6.60	....	Al	150	2800	23.50	53.26	.44	28.1	3419
22	Ford V8-85	112	190⅞	55¾	58¼	6.00/16	2936	725(1)	8-3.06x3.75	30.0	221.0	85-3800	150-2200	6.15	....	CI	140	2400	15.54	40.42	.38	36.2	2816
23	Graham DeL. & Cus. 108	120	....	56 13/32	60¼	6.00/16	....	995	6-3¼x4⅜	25.3	217.8	92-3800	170-1600	6.65	7.10	CI	125	Cra	17.10	40.30	.43	....	3181
24	Graham Sch. & Cus. Sch. 107	120	....	56 13/32	60¼	6.25/16	....	1130	6-3¼x4⅜	25.3	217.8	120-4000	182-2400	6.65	7.10	CI	130	Cra	17.35	31.50	.54	....	3143
25	Hudson Six & DeL. Six 40	113	190⅜	56 5/16	59½	(d)	2940	763	6-3x4⅛	21.6	175.0	92-4000	138-1400	7.00	....	CI	125	125	19.65	37.39	.53	33.5	3397
26	Hudson-Super & C. C. 6 41-43	118-125	(a)	56 5/16	59½	(e)	3050	870	6-3x5	21.6	212.0	102-4000	168-1200	6.50	....	CI	120	125	16.74	34.80	.48	35.4	(3)
27	Hudson-Eight & C. C. 8 44-47	118-125	(a)	56 5/16	59½	(f)	3185	952	8-3x4½	28.8	254.0	128-4200	198-1600	6.50	....	CI	119	125	14.50	28.78	.50	40.9	(6)
28	La Salle 40-50, 40-52	123	(b)	58	59	7.00/16	3790	1320	8-3⅜x4½	36.4	322.0	130-3400	234-1800	6.25	....	CI	155	1000	13.32	33.00	.40	40.3	2764
29	Lincoln V12	136-145	....	60	60	7.50/17	....	....	12-3.125x4.5	46.8	414.0	150-3400	312-1200	6.38	....	Al	138	1000	....	....	.36	38.5	....
30	Lincoln-Zephyr V12	125	209½	55½	58¼	7.00/16	3620	1400(1)	12-2.875x3.75	39.7	292.0	120-3500	....	7.20	....	Al	....	....	14.10	34.33	.41	43.0	3130
31	Mercury V8-95	116	195¾	55¾	58¼	6.00/16	3103	960(1)	8-3.187x3.75	32.5	239.0	95-3600	170-2100	6.15	....	CI	145	2200	15.07	37.92	.40	33.8	2637
32	Nash-LaFayette 4010	117	199 3/16	56⅞	60¼	6.00/16	3275	875	6-3⅜x4⅜	27.3	234.8	99-3400	179-1200	6.30	No	CI	110	Cra	16.07	38.13	.42	36.8	3054
33	Nash-Ambassador 6 4020	121	203 3/16	56⅞	60¼	6.25/16	3380	985	6-3⅜x4⅜	27.3	234.8	105-3400	190-1050	6.00	No	CI	125	350	16.52	36.95	.45	35.4	3018
34	Nash-Ambassador 8 4080	125	207 3/16	57 11/16	61⅜	7.00/15	3655	1195	8-3⅛x4¼	31.2	260.8	115-3400	200-1200	6.00	No	CI	110	350	15.93	36.13	.44	35.2	2890
35	Oldsmobile-Six 60	116	197¾	58	59	6.00/16	3100	899	6-3 7/16x4⅛	28.4	229.7	95-3400	180-1400	6.10	5.61	CI	146	1000	15.66	37.90	.41	37.8	3054
36	Oldsmobile Six 70	120	199¾	58	59	6.50/16	3220	963	6-3 7/16x4⅛	28.4	229.7	95-3400	180-1400	6.10	5.61	CI	146	1000	16.19	39.15	.41	37.8	3117
37	Oldsmobile Cus. 8 Cruiser	124	210¾	58	59	7.00/15	3555	1131	8-3¼x3⅞	33.8	257.1	110-3600	200-2000	6.20	5.80	CI	152	1000	15.77	36.86	.43	37.2	3130
38	Packard-One Ten 1800	122	196⅛	59 3/16	60½	6.25/16	3200	975	6-3½x4¼	29.4	245.0	100-3200	195-1200	6.39	6.71	CI	....	....	15.10	37.00	.41	40.5	3165
39	Packard-One Twenty 1801	127	200⅝	59 3/16	60	6.50/16	3520	1146	8-3¼x4¼	33.8	282.0	120-3600	225-1700	6.41	6.85	CI	....	....	14.25	33.50	.42	40.3	2965
40	Packard-Super 8 1803-4-5	127-38-48	(c)	59 3/16	62½	7.00/16	3855	1632	8-3½x4⅝	39.2	356.0	160-3500	292-1800	6.45	6.85	CI	....	....	12.23	27.21	.45	43.8	(7)
41	Packard-Cus. Super 8 1806-7-8	127-38-48	(c)	59 3/16	62½	7.00/16	4210	2395	8-3½x4⅝	39.2	356.0	160-3500	292-1800	6.45	6.85	CI	....	....	13.23	29.43	.45	40.0	(7)
42	Plymouth-Roadking P-9	117½	194½	57	59 15/16	5.50/16	2869	740	6-3⅛x4⅜	23.4	201.3	84-3600	154-1200	6.70	7.00	CI°	150	1000	16.73	40.10	.42	34.6	3003
43	Plymouth-DeLuxe P-10	117½	194½	57	59 15/16	6.00/16	2924	805	6-3⅛x4⅜	23.4	201.3	84-3600	154-1200	6.70	7.00	CI°	150	1000	17.00	40.76	.42	34.8	3054
44	Pontiac-Spec. 6 40-25	117	198¾	58	59	6.00/16	3135	876	6-3 7/16x4	28.3	222.7	87-3500	164-1400	6.50	7.20	CI	156	1000	16.32	41.78	.39	38.2	3210
45	Pontiac-DeLuxe 6 40-26	120	199¾	58	59	6.00/16	3200	932	6-3 7/16x4	28.3	222.7	87-3500	164-1400	6.50	7.20	CI	156	1000	16.61	42.52	.39	37.4	3210
46	Pontiac-DeLuxe 8 40-28	121	200	58	59	6.50/16	3295	970	8-3¼x3¾	33.8	248.9	100-3700	175-1600	6.50	7.10	CI	152	1000	15.24	37.95	.40	39.8	3117
47	Pontiac-Torpedo 8 40-29	122	207½	58	59	6.50/16	3480	1072	8-3¼x3¾	33.8	248.9	103-3700	175-1600	6.50	7.10	CI	152	1000	15.99	38.64	.41	38.0	3117
48	Studebaker-Champion 2G	....	188¾	56¼	57	5.50/16	2390	740	6-3x3⅞	21.6	164.3	78-4000	128-1600	6.50	....	CI	105	150	17.58	37.05	.47	38.7	3497
49	Studebaker-Commander 10A	....	197½	59⅞	61	6.25/16	3180	965	6-3 5/16x4⅜	26.3	226.0	90-3400	174-1200	6.00	7.00	CI	105	150	16.28	40.88	.40	39.9	3349
50	Studebaker-President 6C	....	203	59¾	61	6.50/16	3420	1095	8-3 1/16x4¼	30.0	250.0	110-3600	195-2000	6.00	6.50	CI	105	150	15.68	35.63	.44	40.9	3299
51	Willys 440	102	181	55¼	56¼	5.50/16	2238	545(1)	4-3⅛x4⅜	15.6	134.2	61-3600	106-2200	6.48	6.81	CI°	111	185	20.41	44.88	.45	33.2	3504

ABBREVIATIONS

♦—Based on shipping weight plus 500 lbs. of the cheapest 5 pass., 4 door sedan
†—Computed on basis of tire revolutions per mile in conjunction with rear axle ratio of cheapest 5 pass., 4 door sedan
††—Computed on basis of displacement of lowest priced sedan, rear axle ratio, effective tire diameter and shipping weight plus 500 lbs.
‡—With Hydra-matic drive
▼—Outer only.
Inner—21 lbs., Valve closed
51 lbs., Valve open
■—Outer only.
Inner—18 lbs., Valve closed
48 lbs., Valve open
*—Exhaust 100 lbs.
°—Aluminum head special equipment
½F—Semi-floating
¾F—Three-quarter floating
(1)—Does not include Federal taxes
(3)—3062 for Model 41; 3025 for Model 43
(6)—3062 for Model 44; 2980 for Model 47
(7)—2703 for Model 1803 and 1806;
2834 for Model 1804 and 1807;
3021 for Model 1805 and 1808
(a)—Super Six and Eight—195⅜; Country Club Six and Eight—202⅜ inches
AC—AC Spark Plug Co.
AL—The Electric Auto-Lite Co.
Al—Aluminum
Ala—Aluminum, Anodized Finish
Als—Aluminum with Struts
Alt—Aluminum with Struts, Tin Plated
At—Aluminum, Tin Plated
(b)—Model 50-206¾; Model 52-210⅞ inches.
(c)—Model 1803-201¼; 1804-212¼;
1805-222¼; 1806-205⅞;
1807-216⅞; 1808-226⅞ inches.
C—Conventional axle
Car—Carter Carburetor Corp.
CD—Continental Diamond Fibre Co.
Ch—Chain
CH—Champion Spark Plug Co.
CI—Cast Iron
CNt—Chrome Nickel Iron, Tin Plated
Cra—Cranking speed
CS—Cast Steel
Ct—Conventional, transverse springs
CT—Cast Iron, Tin Plated
(d)—Traveler, 5.50/16; DeLuxe, 6.00/16
Dia—Diamond Chain & Mfg. Co.
DR—Delco-Remy Division

PASSENGER CARS

Arrangement	Valve Seat Insert (Exhaust)	Valves — Spring Pressure (Lb.) — Open	Valves — Spring Pressure (Lb.) — Closed	Valves — Intake — Head Diam.	Valves — Intake — Seat Angle	Valves — Exhst. — Head Diam.	Valves — Exhst. — Seat Angle	Pistons — Material	Pistons — Weight (Oz.) Without Rings, Pin or Bushing	Pistons — Pin Diameter	Pistons — Pin Locked In	Rings — No. and Width—Compression	Rings — No. and Width—Oil	Camshaft Drive—Make and Type	Crankshaft Counterbalanced	Vibration Damper	No. of Main Bearings	Crankpin Diameter (In.)	Crankpin Length (In.)	Carburetor — Make and Size	Carburetor — Model	Transmission—Location of Shift Lever	Spark Plug—Make and Model	Electrical System—Make	Battery—Make	Rear Axle — Type	Rear Axle — Final Drive	Rear Axle — Torque Medium	Rear Axle — Gear Ratio	Front Suspension	Line Number
L	N	44	28	1.12	45	1.03	45	Alt	5.12	.609	R	2-3/32	1-.1237	Own...Ge	Y	N	3	1.25	1.00	Zen.....13/16	61A5	SL	CH...H10	AL	AL	1/2F	SB	RS	5.25	Ct	1
I	N	70■	29■	1.53	45	1.34	45	Ala	14.25	.812	R	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.00	1.21	Str.....1	AAV-16	SC	AC....46	DR	DR	1/2F	Hyp	TT	4.40	IC	2
I	N	70■	29■	1.53	45	1.34	45	Ala	14.25	.812	R	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.00	1.21	Str.....1	AAV-16	SC	AC....46	DR	DR	1/2F	Hyp	TT	4.40	IC	3
I	N	70■	29■	1.78	45	1.43	45	Ala	17.25	.875	R	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.25	1.31	Str...1 1/4	AAV-26	SC	AC....46	DR	DR	1/2F	Hyp	TT	3.90	IC	4
I	N	70■	29■	1.78	45	1.43	45	Ala	17.25	.875	R	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.25	1.31	Str...1 1/4	AAV-26	SC	AC....46	DR	DR	1/2F	Hyp	TT	3.90	IC	5
I	N	70■	29■	1.78	45	1.43	45	Ala	17.25	.875	R	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.25	1.31	Str...1 1/4	AAV-26	SC	AC....46	DR	DR	1/2F	Hyp	TT	4.18	IC	6
I	N	70■	29■	1.78	45	1.43	45	Ala	17.25	.875	R	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.25	1.31	Str...1 1/4	AAV-26	SC	AC....46	DR	DR	1/2F	Hyp	TT	4.55	IC	7
L	N	145	66	1.88	45	1.63	45	Ala	18.30	.875	F	2-(g)	2-5/32	Mor...Ch	Y	Y	3	2.46	2.03	Str...1 1/4	AAV-26	SC	AC...104	DR	DR	1/2F	Hyp	RS	3.92	IC	8
L	N	145	66	1.88	45	1.63	45	Ala	18.30	.875	F	2-(g)	2-5/32	Mor...Ch	Y	Y	3	2.46	2.03	Str...1 1/4	AAV-26	SC	AC...104	DR	DR	1/2F	Hyp	RS	3.92	IC	9
L	N	145	66	1.88	45	1.63	45	Ala	18.30	.875	F	2-(g)	2-5/32	Mor...Ch	Y	Y	3	2.46	2.03	Str...1 1/4	AAV-26	SC	AC...104	DR	DR	1/2F	Hyp	RS	4.31	IC	10
L	N	145	66	1.88	45	1.63	45	Ala	18.30	.875	F	2-(g)	2-5/32	Mor...Ch	Y	Y	3	2.46	2.03	Str...1 1/4	AAV-26	SC	AC...104	DR	DR	1/2F	Hyp	RS	4.58	IC	11
L	N	98*	50	1.50	45	1.37	45	Ala	15.28	.812	R	2-(g)	1-3/16	Mor...Ch	Y	Y	9	2.00	1.75	Car...1 1/4	(k)	SC	AC...104	DR	DR	1/2F	Hyp	RS	4.31	IC	12
I	N	127	52 1/2	1.64	30	1.46	30	CT	......	.865	R	2-.124	1-.186	GD....Ge	Y	Y	4	2.31	1.50	Car...1 1/4	420S	SC	AC....44	DR	DR	1/2F	Hyp	TT	3.73	C	13
I	N	127	52 1/2	1.64	30	1.46	30	CT	......	.865	R	2-.124	1-.186	GD....Ge	Y	Y	4	2.31	1.50	Car...1 1/4	420S	SC	AC....44	DR	DR	1/2F	Hyp	TT	4.11	IC	14
L	Y	111	42	1.65	45	1.53	45	At	17.50	.859	F	2-1/8	2-5/32	Mor...Ch	Y	Y	4	2.12	1.21	Car...1 1/2	E6S1	SC	AL...A7B	AL	Wil	1/2F	Hyp	RS	3.90	IC	15
L	Y	133	55	1.53	45	1.34	45	At	16.30	.859	F	2-1/8	2-5/32	Whi...Ch	Y	Y	5	2.18	1.12	Str...1 1/4	AAV-2	SC	AL...A7B	AL	Wil	1/2F	Hyp	RS	3.91	IC	16
L	Y	133	55	1.53	45	1.34	45	At	16.30	.859	F	2-1/8	2-5/32	Whi...Ch	Y	Y	5	2.18	1.12	Str...1 1/4	AAV-2	SC	AL..AL7B	AL	Wil	1/2F	Hyp	RS	4.55	IC	17
L	N	41	20	1.37	45	1.15	45	El	16.00	.624	P	2-1/8	1-5/32	For....Ge	Y	N	2	1.50	.781	Til......1	DY-1A	SL	AL....A5	AL	AL	1/2F	SB	TT	5.14	C	18
L	Y	111	42	1.65	45	1.53	45	At	17.50	.859	F	2-1/8	2-5/32	Mor...Ch	Y	Y	4	2.12	1.21	Car...1 1/2	E6N1	SC	AL...A7B	AL	Wil	1/2F	Hyp	RS	4.10	IC	19
L	Y	80	36	1.46	45	1.46	45	Alt	15.20	.859	F	2-1/8	2-5/32	Mor...Ch	Y	Y	4	2.06	1.00	Str...1 3/8	BXV-3	SC	AL...A7B	AL	AL	1/2F	Hyp	RS	4.10	IC	20
L	Y	50	28	1.28	45	1.28	45	CS	8.12	.688	F	2-.0917	1-.1550	CD....Ge	Y	Y	3	1.70	1.41	Own......	....	SC	CH...H10	Own	Own	3/4F	SB	RR	4.44	Ct	21
L	Y	78	38 1/2	1.53	45	1.53	45	CS	12.00	.750	F	2-(h)	1-.1575	CD....Ge	Y	Y	3	2.00	1.75	Own......	....	SC	CH...H10	Own	Own	3/4F	SB	RR	3.78	Ct	22
L	N	98	44	1.51	30	1.32	45	Alt	14.12	.812	R	2-3/32	2-5/32	LB....Ch	Y	Y	4	2.06	1.31	Car...1 3/8	....	SC	CH...J10	DR	Wil	1/2F	Hyp	RS	4.27	C	23
L	N	98	44	1.51	30	1.32	45	Alt	14.12	.812	R	2-3/32	2-5/32	LB....Ch	Y	Y	4	2.06	1.31	Car...1 3/8	....	SC	CH...J10	DR	Wil	1/2F	Hyp	RS	4.27	C	24
L	N	80	40	1.37	45	1.37	45	Al	10.50	.750	F	2-3/32	2-(i)	GE....Ge	Y	Y	3	1.93	1.37	Car...1 1/4	454S	SC	CH..J8-A	AL	Nat	1/2F	SB	RS	4.55	IC	25
L	N	80	40	1.37	45	1.37	45	Al	10.50	.750	F	2-3/32	2-(i)	GE....Ge	Y	Y	3	1.93	1.37	Car.....1	461S	SC	CH..J8-A	AL	Nat	1/2F	SB	RS	4.11	IC	26
L	N	80	40	1.50	45	1.37	45	Al	10.50	.750	F	2-3/32	2-(i)	GE....Ge	Y	Y	5	1.93	1.37	Car...1 1/4	455S	SC	CH..J8-A	AL	Nat	1/2F	SB	RS	4.11	IC	27
L	N	145	66	1.88	45	1.63	45	Ala	16.88	.875	F	2-(g)	2-5/32	Mor...Ch	Y	N	3	2.46	2.03	Car...1 1/4	460S	SC	AC...104	DR	DR	1/2F	Hyp	RS	3.92	IC	28
L	Y	135	57	1.68	45	1.68	45	Ala	12.50	.875	P	2-.1237	2-.1547	Mor...Ch	Y	Y	4	2.50	2.00	Str...1 7/16	EE22	SL	CH.....7	AL	.....	FF	SB	TT	4.58	C	29
L	Y	116	54	1.53	45	1.53	45	CS	......	......		2-.0932	1-.1847	CD....Ge	Y	Y	4	2.12	1.57	SG......	....	SC	CH...H10	Own	Own	3/4F	Hyp	TT	4.44	Ct	30
L	Y	78	38 1/2	1.53	45	1.53	45	CS	13.94	.750	F	2-(h)	1-.1570	CD....Ge	Y	Y	3	2.14	1.75	Own......	....	SC	CH...H10	Own	Own	3/4F	SB	TT	3.54	Ct	31
L	N	115	70	1.65	45	1.53	45	Alt	......	.874	F	2-.124	2-.155	W-D..Ch	Y	Y	7	2.00	1.42	Car.....1	458S	SC	AL....B7	AL	USL	1/2F	Hyp	RS	4.10	IC	32
I	N	95▼	38▼	1.75	45	1.59	45	Alt	19.25	.874	F	2-.124	2-.155	W-D..Ch	Y	Y	7	2.00	1.42	Car...1 1/4	435S	SC	AC....45	AL	USL	1/2F	Hyp	RS	4.10	IC	33
I	N	95▼	38▼	1.65	45	1.46	45	Alt	16.00	.874	F	2-.124	2-(j)	Dia....Ch	N	Y	9	2.00	1.23	Car.....1	465S	SC	AC....45	AL	USL	1/2F	Hyp	RS	4.10	IC	34
L	N	95 1/2	50 1/2	1.56	30	1.42	45	Ala	17.75	.859	P	2-3/32	2-3/16	Whi...Ch	Y	Y	4	2.12	1.37	Car...1 1/4	466S	SC	AC....45	DR	DR	1/2F	Hyp	SA	4.10	IC	35
L	N	95 1/2	50 1/2	1.56	30	1.42	45	Ala	17.75	.859	P	2-3/32	2-3/16	Whi. Ch	Y	Y	4	2.12	1.37	Car...1 1/4	466S	SC	AC....45	DR	DR	1/2F	Hyp	SA	4.30	IC	36
L	N	94	46	1.56	30	1.42	45	Ala	16.00	.859	P	2-3/32	2-3/16	LB....Ch	Y	Y	5	2.12	1.37	Car...1 1/4	389S	SC	AC....45	DR	DR	1/2F	Hyp	SA	3.6‡	IC	37
L	....	120	50	1.53	30	1.37	45	Alt	20.75	.875	F	2-.1242	1-.1862	MR...Ch	Y	Y	4	2.09	1.25	Str...1 1/4	BXOV-26	SC	(m)	AL	PO	1/2F	Hyp	RS	4.30	IC	38
L	....	120	50	1.48	30	1.37	45	Alt	17.25	.875	F	2-.1242	1-.1862	MR...Ch	Y	Y	5	2.09	1.25	Str.....1	EE-16	SC	(m)	AL	Wil	1/2F	Hyp	RS	4.09	IC	39
L	....	135	58	1.67	30	1.43	45	Alt	20.75	.875	F	2-.1242	1-.1862	MR. Ch	Y	Y	9	2.25	1.37	Str...1 1/4	AAV-26	SC	(m)	AL	Wil	1/2F	Hyp	RS	(n)	IC	40
L	....	135	58	1.67	30	1.43	45	Alt	20.75	.875	F	2-.1242	1-.1862	MR...Ch	Y	Y	9	2.25	1.37	Str...1 1/4	AAV-26	SC	(m)	AL	Wil	1/2F	Hyp	RS	(n)	IC	41
L	Y	80	36	1.46	45	1.46	45	At	14.40	.859	F	2-1/8	2-5/32	Mor...Ch	Y	N	4	1.93	1.00	Car...1 1/2	D6A2	SC	AL...A7B	AL	AL	1/2F	Hyp	RS	3.90	IC	42
L	Y	80	36	1.46	45	1.46	45	At	14.40	.859	F	2-1/8	2-5/32	Mor...Ch	Y	N	4	1.93	1.00	Car...1 1/2	D6A2	SC	AL...A7B	AL	AL	1/2F	Hyp	RS	4.10	IC	43
L	N	101	60	1.59	30	1.46	45	CNt	27.12	.937	P	2-3/32	1-3/16	Mor...Ch	Y	Y	4	2.12	1.28	Car...1 1/4	463S	SC	AC....45	DR	DR	1/2F	Hyp	RS	4.30	IC	44
L	N	101	60	1.59	30	1.46	45	CNt	27.12	.937	P	2-3/32	1-3/16	Mor...Ch	Y	Y	4	2.12	1.28	Car...1 1/4	463S	SC	AC....45	DR	DR	1/2F	Hyp	RS	4.30	IC	45
L	N	101	60	1.46	30	1.34	45	CNt	24.62	.937	P	2-3/32	1-3/16	Mor...Ch	Y	Y	5	2.00	1.06	Car...1 1/4	462S	SC	AC....45	DR	DR	1/2F	Hyp	RS	4.30	IC	46
L	N	101	60	1.46	30	1.34	45	CNt	24.62	.937	P	2-3/32	1-3/16	Mor...Ch	Y	Y	5	2.00	1.06	Car...1 1/4	469S	SC	AC....45	DR	DR	1/2F	Hyp	RS	4.30	IC	47
L	N	92	51	1.34	45	1.28	45	At	8.96	.750	R	2-(g)	1-5/32	CD....Ge	Y	N	4	1.81	1.12	Car...1 1/4	468S	SC	CH.....8	AL	Wil	1/2F	Hyp	RS	4.56	IT	48
L	N	130	57	1.46	45	1.28	45	At	14.40	.875	R	2-1/8	1-3/16	CD....Ge	Y	Y	4	2.37	1.37	Str...1 1/4	BXO-26	SC	CH.....8	AL	Wil	1/2F	Hyp	RS	4.55	IT	49
L	N	130	57	1.40	45	1.28	45	At	13.60	.875	R	2-1/8	1-3/16	CD....Ge	Y	Y	9	1.87	1.18	Str.....1	AAO-161	SC	CH.....8	DR	Wil	1/2F	Hyp	RS	4.55	IT	50
L	N	96 1/2	50 1/2	1.53	45	1.46	45	At	12.00	.812	R	2-3/32	1-3/16	LB....Ch	Y	N	3	1.93	1.31	Car.....1	450S	(l)	CH....J8	AL	N-U	1/2F	SB	RS	(o)	C	51

(e)—Super Six, 6.00/16; Country Club Six, 6.25/16
El—Electric Furnace Iron
(f)—Eight, 6.00/16; Country Club Eight, 6.50/16
F—Floating (Piston Pin)
FF—Full Floating (Rear Axle)
For—Formica Co.
(g)Upper 3/32; lower 1/8
GD—General Electric or Continental Diamond Fibre
Ge—Gear
GE—General Electric Co.
(h)—.0945 Top ring; .0940 Center ring
Hyp—Hypoid Gear
(i)—.187 above pin; .155 below pin
I—In Head (valves)
IC—Independent Coil Springs
IT—Independent Transverse Springs
(j)—Third ring, .1240; Fourth ring, .1865
(k)—L. H. 4078, R. H. 4088
(l)—Lever from floor on Speedway Model; Steering column on De Luxe
L—L-Head (valves)
LB—Link Belt Co.
(m)—AC 104 or Champion Y 4
Mor—Morse Chain Co.
MR—Morse Chain or Ramsey Chain Co.
(n)—Model 1803 and 1806; Ratio 3.92
1804 and 1807; Ratio 4.09
1805 and 1808; Ratio 4.36
N—No or none
Nat—National Battery Co.
N-U—National or USL Battery
(o)—De Luxe Model, 4.55 Ratio; Speedway Model, 4.30 Ratio
P—Locked in piston
PO—Prest-O-Lite Battery Co.
R—Locked in rod
RR—Radius rods
RS—Rear Springs
SA—Stabilizing arms
SB—Spiral bevel
SC—On steering column
SG—Stromberg or Chandler-Groves
SL—Standard lever through floor
Str—Stromberg Carburetor Division
Til—Tillotson Mfg. Co.
TT—Through torque tube
USL—USL Battery Corp.
W-D—Whitney Mfg. Co., and Diamond Chain & Mfg. Co.
Whi—Whitney Mfg. Co.
Wil—Willard Storage Battery Co.
Y—Yes
Zen—Zenith Carburetor Division

1940 TRENDS

Passenger Car Chassis and Engines

Eight Billion Pounds of Cars Sold in 1939

(Based on New Registrations)

	No. of Units Sold*	Gross Shipping Wgt. of Cars Sold (lb.)†	Gross Max. Hp. of Cars Sold‡	Average Weight (lb.)	Average Hp.
1930	2,625,979	7,320,000,000	142,800,000	2,780	54
1931	1,908,141	5,380,000,000	109,200,000	2,820	57
1932	1,096,399	3,200,000,000	75,400,000	2,920	69
1933	1,493,794	4,220,000,000	106,000,000	2,820	71
1934	1,888,557	5,560,000,000	156,000,000	2,940	83
1935	2,743,908	8,120,000,000	234,000,000	2,960	85
1936	3,404,497	10,190,000,000	291,000,000	3,000	86
1937	3,483,752	10,470,000,000	303,900,000	3,005	87
1938	1,891,021	5,743,000,000	169,200,000	3,035	89
1939	2,653,377	7,948,000,000	239,200,000	2,996	90

† Shipping weight of 5-passenger, 4-door sedan, taken as typical and used in conjunction with new registrations of each model. ‡ Maximum horsepower taken from previous Statistical Issues and used in conjunction with new registrations of each model. * R. L. Polk & Co., registrations of new passenger cars.

1939 Models by Retail Price Class Groups

(Based on New Registrations of 1939 Models and Delivered Price at Factory of Five-Passenger, Four-Door Sedan)

	Average Hp.	Average Displacement	Average Compression Ratio — to 1	Average Number of Cylinders	Average R.P.M.
Chevrolet, Ford and Plymouth	83.46	211.36	6.35	6.64	3493
Others under $1000	92.26	223.51	6.27	6.59	3519
$1,001—$1,500	112.05	268.04	6.41	7.42	3536
$1,501—$2,000	126.62	300.272	6.35	8.00	3566
$2,001—$3,000	134.99	334.61	6.39	8.00	3359
$3,001 and over	170.61	451.66	6.39	12.67	3315
Total (Average of All Price Classes)	88.20	252.52	6.33	10.61	3505

Fourteen Years of Engine Trends

(Based on Number of Models Offered)

	Hp. per Cu. In. of Displacement	Average Compression Ratio	Average B.M.E.P. At Maximum Hp. (Lb. per Sq. In.)	Bore (Inches)	Stroke (Inches)	Piston Displ. (Cu. In.)	Average Piston Speeds (Feet per Min.)	Displacement per Cylinder (Cu. In.)	Average Number of Cylinders	Average R.P.M.	Average Brake Horsepower
1927	.256	4.55	74.5	3.26	4.67	254.9	2150	39.5	6.45	2740	65.8
1928	.276	4.86	76.2	3.27	4.58	257.7	2210	39.1	6.59	2860	70.9
1929	.306	4.99	80.6	3.27	4.57	261.3	2310	38.9	6.71	3063	81.6
1930	.331	5.15	82.7	3.26	4.51	264.6	2380	37.6	7.04	3170	87.6
1931	.344	5.23	84.3	3.21	4.45	273.0	2395	36.8	7.49	3230	95.0
1932	.353	5.29	86.2	3.26	4.41	283.9	2390	36.7	7.78	3250	101.0
1933	.376	5.57	88.5	3.23	4.40	284.1	2463	36.0	7.88	3360	106.5
1934	.388	5.72	90.1	3.24	4.40	289.2	2508	36.2	7.97	3420	112.5
1935	.398	5.98	90.2	3.23	4.39	271.4	2535	36.1	7.51	3480	109.6
1936	.411	6.14	92.3	3.39	4.32	267.9	2498	35.6	7.50	3487	110.1
1937	.417	6.25	93.1	3.25	4.31	277.6	2554	35.8	7.74	3556	115.9
1938	.412	6.32	91.2	3.25	4.27	271.1	2545	35.7	7.60	3576	111.7
1939	.415	6.32	92.7	3.24	4.23	255.3	2498	35.1	7.28	3543	105.9
1940	.426	6.41	93.9	3.25	4.17	254.0	2490	35.0	7.25	3580	107.9

1940 TRUCK SPECIFICATIONS

Key to References Definitions and Abbreviations

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(C)—Converted Ford or Chevrolet model, identifiable by engine make listed.
(d)—Intended for dump or tractor service only.
(D)—Diesel-engine equipped.
e.b.s.—Engine-between-seat design.
e.u.s.—Engine-under-seat design.
(N)—Not available as a tractor.
(T)—Specifically designed for tractor use only.

(1) Autocar—Larger service brake areas on rear axles are provided when tires of 24" base are supplied.

(2) Autocar—Price does not include auxiliary axle. Chassis weight includes auxiliary axle complete; area of brake lining and drum area do not include auxiliary rear axle.

(3) Available—All models available in c.o.e. design.

(4) Chevrolet—Governor set not to exceed 45 M.P.H.

(5) Condor—These models available with double drop bus frames.

(6) Federal—263 cu. in. engine and 11" clutch available on Models 15 and 75. 404 cu. in. and 428 cu. in. engines available on Model 40. 428 cu. in. engine available on Models 50 and 50H. Oversize or two-speed rear axles available on Models 15, 18 20, 25, 29, 29H, 40, 75, 80, 85, 89 and 89H. Double reduction rear axles available on Models 20, 25, 29, 29H, 40, 80, 85, 89 and 89H. Two or three-speed auxiliary transmissions available on all models. All above equipment furnished at extra cost.

(7) Federal—Models 29H and 89H when furnished with fishplates, radius rods and 9.75/20 tires are known as 29XH and 89XH and have gross rating of 25,000 lbs.

(9) Gramm—Models 31, 41, 46, 56, 71, 76, 86 and 96 both gasoline and diesel available with double drop bus frames of various wheelbases. 221 cu. in. engine available on Model 21. 263 cu. in. engine available on Models 31 and 41. 282 cu. in. engine and 5 speed transmission available on Models 41, 46, and 56. 320 cu. in. engine and 5 speed transmission available on Models 41, 46, 56, and 71. 404 cu. in. engine and larger 5 speed transmission available on Model 86. Oversize two speed and double reduction axles available on Models 21, 31, 41, 46, 56, 71, 76 and 86 both gasoline and diesel. All other equipment furnished at extra cost.

(10) Corbitt—Wheelbases optional—any wheelbase desired furnished at chassis price listed.

(11) International Harvester—By "Normal operating conditions" (see definition of Gross Vehicle Weight for Normal Service) is meant operation on comparatively level terrain, over roads with a tractive resistance value of from 25 to 30 pounds per ton of gross vehicle weight and at controlled and uniform speeds within a range of not to exceed 45 m.p.h.

(14) Reo—Also available with four speed transmission and bevel gear rear axle.

(15) Sterling—Available with double reduction rear axle.

(16) Sterling—Diesel powered unit of comparable capacity available in addition to gasoline models.

(18) Willys—Advertised list price less Federal tax. Cab Pick-up $525; Cab Stake $545; Panel Delivery $799. Prices, complete with shock absorbers and front and rear bumpers. Standard tires 5.50/16—4 ply; Panel Delivery 6.00/16—4 ply; 6.00/16S—6 ply—optional.

DEFINITIONS

MAKE AND MODEL
Only Domestic Truck Models are listed in this Table.

OPTIONAL UNITS
For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are yet considered standard stock truck models.

CHASSIS LIST PRICE
The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

GROSS VEHICLE WEIGHT FOR NORMAL SERVICE
Gross vehicle weights specified are based on normal operating conditions, which permits the manufacturer either to increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Gross vehicle weights given are based upon the Maximum Authorized Tire Size listed.

CHASSIS WEIGHT
The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as the conventional chassis types.

STANDARD TIRE SIZE
The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE
The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood except where otherwise noted.

MINIMUM STANDARD WHEELBASE
The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE
The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis manufacturer.

MAXIMUM BRAKE HP.
Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE
Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS
Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix.
BL—Brown-Lipe.
Bu or Bud—Buda.
Cat—Caterpillar.
Cl or Cla—Clark.
C or Chev—Chevrolet.
Co—Covert.
Con—Continental.
Col—Columbia.
Cum—Cummins-Diesel.
Eat—Eaton.
Fu—Fuller.
F—Ford.
Her—Hercules.
L—Lockheed.
LO—Lockheed front, Own rear.
LW—Lockheed front, Wisconsin rear.
Lyc—Lycoming.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Sal—Salisbury.
Shu—Shuler.
Spi—Spicer.
T or Tim—Timken.
TO—Timken front, Own rear.
TW—Timken-Wisconsin.
TWH—Timken Wisconsin Herrington.
WG—Warner Gear.
WH—Wisconsin Herrington.
W-Hes—Waukesha Hesselman.
Wau—Waukesha.
W or Wis—Wisconsin.
WO—Wagner front, Own rear.
Ws—Westinghouse.

BRAKES—Service

Location

2—Two Wheels, rear only.
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.
6—Six Wheels, front and rear.

Type

I—Internal.
X—External.

Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—Hand

Location

C—Center of double propeller shaft.
2—Rear wheels.
2/4—Two-wheel brakes effective on all four wheels through driveshaft.
4—Four wheels.
6—Six wheels.
J—Jackshaft.
T—Transmission.
F—Driveshaft.
P—Propeller shaft.

Type

D—Tru-Stop disk.
I—Internal.
X—External.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
C—Centrifuse.
CI—Copper iron.
D—Dayton.
E—Ermalite.
F—Furnace iron.
G—Gunite.
N—Nickel iron.
p—Pressed steel.
P—Pressed steel.
s—Cast steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME—Type

I—"I" Beam.
C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
X—x-Braced.

GOVERNOR Standard

Y—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
C—Chain.
D—Dead.
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-floating.
¾—Three-quarter floating.

Gear Ratios

(*)Ratios other than standard at extra cost.
(**) Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
H—Hotchkiss (springs).
R—Radius Rods.
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
4F—Front Axle and Forward unit of Rear Axle Group.
4FR—Front Axle and Rear unit of Rear Axle Group.
6—All wheels.

1940 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE: Minimum Standard	WHEELBASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear, S-single rear): Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE: Make and Model	ENGINE: No. of Cylinders, Bore and Stroke	ENGINE: Displacement	ENGINE: Comp. Ratio	ENGINE: Torque lb. ft.	ENGINE: Max. Brake H.P. at R.P.M. Given	ENGINE: Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	TRANSMISSION: Forward Sp'ds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	BRAKES SERVICE: Lining Area	BRAKES SERVICE: Drum Area	BRAKES SERVICE: Drum Material	BRAKES: Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	FRAME: Type
1	Autocar(1) C-10	1250	139	179	13500	4790	6.50/20D	8.25/20	Her JXB	6-3⅝x4¼	263	5.8	184	73-2300	7-2½x10 11/16	Y	Cla 185F	4	Tim 54412	SF	H	5.83-6.8	Tim 31013	L4IHV	308	470	c	TD	62½	8x2¾x¼	T
2	.....(D) DC-10	2550	139	179	13500	4925	6.50/20D	8.25/20	Her DJXB	6-3½x4½	260	15.	178	77-2600	7-3x10 1/32	Y	Cla 185F	4	Tim 54412	SF	H	5.83-6.8	Tim 31013	L4IHV	308	470	c	TD	62½	8x2¾x¼	T
3	.....C-20	1625	139	179	16000	5150	6.50/20D	9.00/20	Her JXC	6-3¾x4¼	282	5.8	197	78-2300	7-2½x10 11/16	Y	Cla 200VO	5	Tim 56410	SF	H	6.16-7.4	Tim 31015	L4IHV	358	578	c	TD	62½	8x2¾x¼	T
4	.....(D) DC-20	2925	139	179	16000	5285	6.50/20D	9.00/20	Her DJXC	6-3¾x4½	298	15.	208	83-2600	7-3x10 1/32	Y	Cla 200VO	5	Tim 56410	SF	H	6.16-7.4	Tim 31015	L4IHV	358	578	c	TD	62½	8x2¾x¼	T
5	.....C-30	2150	142	200	18500	6410	7.00/20D	9.00/20	Own 315	6-3¾x4¾	315	5.5	220	81-2400	7-3x12⅝	Y	Cla 200VO	5	Tim 56400	SF	H	6.16-7.4	Tim 32502	L4IHV	402	659	c	TD	62	9x3x¼	T
6	.....(N) C-40	2850	164	200	20000	6890	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own RC	2F	H	6.49-7.89	Tim 32502	LO4IDV	466	694	c	2I	84	9x3x¼	T
7	.....(T) C-40-T	3000	142	164	32000	7060	8.25/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.13	Tim 32502	LO4IDV	466	694	c	2I	62	9x3x¼	T
8	.....(d) C-40-D	3100	148	164	20000	7290	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.13	Tim 35000	LO4IDV	466	694	c	2I	74	9x3x¼	T
9	.....(N) C-50	3125	164	200	25000	7175	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.13	Tim 35000	LO4IDV	466	694	c	2I	84	9x3x¼	T
10	.....(d) C-50-D	3325	154	164	22000	7810	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Fu 5A43	5	Own TF	2F	H	7.85-8.57	Tim 35000	LO4IDV	567	831	c	2I	74	9x3x¼	T
11	.....(N) C-60	3600	164	200	26000	8190	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own DF5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	84	9x3x¼	T
12	.....(T) C-60-T	4100	148	164	36000	8240	9.00/20D	9.75/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 32502	LO4IDV	567	831	c	2I	68	9x3x¼	T
13	.....(N) C-70	4500	148	200	28000	8750	9.75/20D	10.50/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 35100	LO4IDV	580	930	c	FD	84	9x3x¼	T
14	.....(T) C-70-T	4600	148	164	40000	8330	9.00/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 32502	LO4IDV	567	831	c	FD	68	9x3x¼	T
15	.....(N) C-80	5100	164	200	30000	9770	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 35100	LO4IDV	580	930	c	FD	84	10⅜x3x¼	T
16	.....(T) C-80-T	4900	148	164	45000	9300	9.75/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 35000	LO4IDV	567	831	c	FD	68	9x3x¼	T
17	.....(d) C-80-D	5750	170	170	30000	10060	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	OwTF4:A3	12	Own CGA	2F	H	7.69-8.52	Tim 26452	LO4IDV	580	930	c	FD	90	10½x3x 5/16	T
18	.....(N) C-90	5850	182	200	36000	10060	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	c	FD	102	10⅜x3x¼	T
19	.....(T) C-90-T	5700	148	164	50000	9720	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 35100	TO4IA	631	930	c	FD	68	9x3x¼	T
20	.....(d) C-90-D	6650	170	170	44000	13325	10.50/24D	13.50/24	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	OwTF4:A3	12	T-W79742-W	2F	R	9.3-10.1	Tim 27452	TW4IA	739	1050	c	FD	90	10½x3x 5/16	T
21	(T)(D)DC-100-T	8100	144	174	60000	11420	9.75/20D	11.25/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL7341:A3	12	Own GD	2F	R	4.4-6.97	Tim 27452	TO4IA	631	930	a	D	70	10⅝x3x¼	L
22	(d)(D)DC-100-D	9500	158	158	54000	12200	11.25/24D	13.50/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL7341:A3	12	Tim 79742W	2F	R	6.32-7.33	Tim 27452	TW4IA	739	1050	a	D	84	10½x3x 5/16	L
23	.....(N) NFS	5600	195	195	26000	10380	10.50/20D	10.50/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 26452	LO4IDV	580	930	c	FD	119½	9x3x¼	T
24	.....(N) TS	6600	204	204	29740	11404	10.50/24D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF4	4	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	739	1050	c	FD	129	10½x3x 5/16	P
25	c.o.e. U-10	1350	84	142	13500	4650	6.50/20D	8.25/20	Her JXB	6-3⅝x4¼	263	5.8	184	73-2300	7-2½x10 11/16	Y	Cla 185F	4	Tim 54412	SF	H	5.83-6.8	Tim 31015	L4IHV	328	528	c	TD	62	8x2¾x¼	T
26	c.o.e. U-20	1725	84	142	16000	5220	6.50/20D	9.00/20	Her JXC	6-3¾x4¼	282	5.8	197	78-2300	7-2½x10 11/16	Y	Cla 200VO	5	Tim 56410	SF	H	6.16-7.4	Tim 32502	L4IHV	358	578	c	TD	62	8x2¾x¼	T
27	c.o.e. U-30	2300	96	142	18500	6430	7.00/20D	9.00/20	Own 315	6-3¾x4¾	315	5.5	220	81-2400	7-3x12⅝	Y	Cla 200VO	5	Tim 56400	SF	H	6.16-7.4	Tim 35000	L4IHV	402	659	c	TD	74	9x3x¼	T
28	c.o.e. (N) U-40	3050	106	142	20000	6970	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own RC	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	84	9x3x¼	T
29	c.o.e. (T) U-40-T	3200	96	106	32000	7265	8.25/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	74	9x3x¼	T
30	c.o.e. (d) U-40-D	3300	96	96	20000	6910	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	74	9x3x¼	T
31	c.o.e. (N) U-50	3435	106	142	25000	7530	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	84	9x3x¼	T
32	e.u.s. (N) U-60	3800	109	145	26000	7970	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own UDF5	5	Own DB	2F	H	6.49-7.89	Tim 35100	LO4IDV	479	793	c	2I	84¼	9x3x¼	T
33	e.u.s. (T) U-60-T	4500	98	109	36000	8380	9.00/20D	9.75/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.85-8.57	Tim 35000	LO4IDV	567	831	c	2I	73¼	8x3x¼	T
34	e.u.s. (d) U-60-D	4400	100	100	26000	8400	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own UDF5	5	Own C	2F	H	7.85-8.57	Tim 26452	LO4IDV	580	930	c	2I	75¼	8x3x¼	T
35	e.u.s. (N) U-70	5000	109	163	28000	8290	9.75/20D	10.50/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.2 -8.57	Tim 26452	LO4IDV	580	930	c	FD	84¼	8x3x¼	T
36	e.u.s. (T) U-70-T	5000	98	109	40000	8400	9.00/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.2 -8.57	Tim 35000	LO4IDV	567	831	c	FD	73¼	8x3x¼	T
37	e.u.s. (N) U-80	5400	128	163	30000	9770	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF5	5	Own TG	2F	H	7.2 -8.68	Tim 26452	LO4IDV	631	930	c	FD	103¼	9x3x¼	T
38	e.u.s. (T) U-80-T	5450	98	109	45000	9190	9.75/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF5	5	Own CG	2F	H	7.69-8.52	Tim 26452	LO4IDV	580	930	c	FD	73¼	8x3x¼	T
39	e.u.s. (d) U-80-D	5850	109	120	30000	10070	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Fu 5A62	5	Own CGA	2F	H	7.69-8.52	Tim 26452	LO4IDV	631	930	c	2I	84½	9x3x¼	T
40	e.u.s. (N) U-90	6000	128	163	36000	10430	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	c	FD	103¼	9x3x¼	T
41	e.u.s. (T) U-90-T	6000	98	109	50000	9780	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	Own CG	2F	H	7.69-8.52	Tim 26452	TO4IA	631	930	c	FD	73¼	9x3x¼	T
42	e.u.s. (d) U-90-D	6850	109	120	44000	12410	10.50/24D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Fu 5A62	5	Tim 79742-W	2F	R	8.59-10.1	Tim 27452	TW4IA	739	1050	c	2I	84¼	10½x3x 5/16	T
43	e.u.s. (N) UNFS	5600	145	145	27000	9585	10.50/20D	10.50/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF4	4	Own TF	2F	H	7.20-8.57	Tim 26452	LO4IDV	637	930	c	FD	120¼	9x3x¼	P
44	e.u.s. (N) UTS	6600	145	145	29900	10927	10.50/24D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF4	4	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	c	FD	120¼	10½x3x 5/16	P
45	Avail- (3) P-105	1035	96	140	7000	2425	6.00/17S	7.50/17	Wau FC	4-3¼x4	133	5.6	93	36-2800	3-2⅛x3 11/16	N	WG T9	4	Tim 53508	SF	H	**-6.6	Tim 30000H	L4IH	266	388	a	TX	48	4x2x¼	T
46	able.......X-110	1370	138	176	11700	3900	6.50/20D	7.00/20	Wau ZKA	6-3⅜x4⅛	221	5.6	154	66-2900	4-2⅜x5⅝	N	WG T9	4	Tim 53508	SF	H	**-6.6	Tim 30000H	L4IH	266	388	a	TX	60	8x3x¼	T
47	..........X-120	1520	138	172	13200	4100	7.00/20D	7.50/20	Wau ZKA	6-3⅜x4⅛	221	5.6	154	66-2900	4-2⅜x5⅝	N	WG T9	4	Tim 53308	SF	H	**-6.6	Tim 30000H	L4IH	304	477	a	TX	60	10x3x¼	T
48	..........X-140	1600	138	172	13200	4300	7.00/20D	7.50/20	Wau BL	6-3½x4¼	245	5.7	165	73-3000	7-2⅝x10¼	N	WG T9	4	Tim 53308	SF	H	**-6.6	Tim 31000H	L4IH	300	552	a	TX	60	10x3x¼	T
49	..........X-170	1795	138	172	15900	4800	7.50/20D	8.25/20	Wau BM	6-3⅝x4¼	263	5.7	178	78-3100	7-2⅝x10¼	N	WG T9	4	Tim 54411	SF	H	**-6.8	Tim 31000H	L4IH	328	603	a	TX	60	10x3x¼	T
50	..........X-220	1905	138	172	15900	4900	7.50/20D	8.25/20	Wau BK	6-3¾x4¼	282	5.7	188	85-3200	7-2⅝x10¼	N	WG T9A	4	Tim 54411	SF	H	**-6.8	Tim 32502H	L4IH	328	603	a	TX	60	10x3x¼	T
51	..........X-250	2240	138	196	19500	5500	8.25/20D	9.00/20	Wau BZ	6-4x4¼	320	5.7	210	86-2800	7-2⅝x10¼	Y	Fu 5A330	5	Tim 56410	SF	R	**-7.4	Tim 32502H	L4IH	328	603	a	TX	60	12x3x¼	T
52	..........X-280	2440	138	196	23400	6100	9.00/20D	9.75/20	Wau BZ	6-4x4¼	320	5.7	210	86-2800	7-2⅝x10¼	Y	Fu 5A330	5	Tim 58305	SF	R	**-7.8	Tim 33000A	L4IH	370	684	a	TX	60	12x3x¼	T
53	..........X-310	2880	142	196	23400	6800	9.00/20D	9.75/20	Wau MKR	6-4⅛x4¾	381	5.3	270	99-2400	7-2⅝x12½	Y	Fu 5-A-430	5	Tim 58305	SF	R	**-7.8	Tim 35000H	L4IH	370	684	a	TX	60	12x3x¼	T
54	..........X-410	3800	142	196	28200	8000	9.75/20D	10.50/20	Wau SRLR	6-4⅜x5⅛	462	5.5	330	112-2300	7-3x13⅞	Y	Fu 5-A-620	5	Tim 65725H	WF	R	**-8.50	Tim 35000H	L4IH	462	793	a	TD	60	12x3x¼	T
55	Bantam..........	349	75	75	1700	850	4.00/15S	5.00/15	Own	4-2.26x3	50	7.4	341	22-3800	2-2⅛x1.005	N	WG T48E	3	Spl 10	S	H	**-5.25	Spl 10	O4IM	76	104	P	4I	114	8x2 3/16x.109	....
56	Brockway......78	895	138	164	13000	3965	6.00/20D	32x6	Con 24B	6-3 3/16x4⅜	210	5.7	154	71-3100	4-2¼x6	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IH	255	402	a	TX	65 1/16	7 11/16x3x 7/32	T
57	83	1195	138	176	14000	4100	6.50/20D	7.50/20	Con 25B	6-3 7/16x4⅜	244	5.4	171	84-3250	4-2⅜x6⅜	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	255	402	a	TX	65 1/16	7 11/16x3x 7/32	T
58	88	1290	150	176	15000	4500	6.50/20D	7.50/20	Con 25B	6-3 7/16x4⅜	244	5.4	171	84-3250	4-2⅜x6⅜	N	WG T9	4	Tim 53307H	SF	H	6.2 -6.8	Tim 30000H	L4IHV	298	477	a	TX	71 1/16	7 11/16x3x 7/32	T
59	92	1560	150	188	16000	4700	7.00/20D	8.25/20	Con 25B	6-3 7/16x4⅜	244	5.4	171	84-3250	4-2⅜x6⅜	N	WG T9	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83 1/16	8x3x¼	T
60	94	1850	156	188	18500	5050	7.50/20D	8.25/20	Con 25B	6-3 7/16x4⅜	244	5.4	171	84-3250	4-2⅜x6⅜	N	BL B341	4	Tim 56410H	SF	H	6.16-7.4	Tim 31000H	L4IHV	329	580	a	CD	83 1/16	8x3x¼	T
61	96	1740	156	176	15000	5150	7.00/20D	8.25/20	Con 29B	6-3 11/16x4½	288	5.4	192	78-2650	7-2⅝x13	N	BL B341	4	Tim 53307H	SF	H	5.83-6.8	Tim 31000H	L4IHV	302	528	a	CD	83 1/16	7 11/16x3x 7/32	T
62	110	1900	156	188	18000	5490	7.50/20D	8.25/20	Con 29B	6-3 11/16x4½	288	5.4	192	78-2650	7-2⅝x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83 1/16	8x3x¼	T
63	112	1710	150	188	18000	5150	7.00/20D	8.25/20	Con 38B	6-3¾x4⅜	290	5.6	205	87-2800	7-2⅝x12	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	77 1/16	8x3x¼	T
64	..........125X	2075	164	188	18000	5570	7.50/20D	8.25/20	Con 31B	6-3⅞x4½	318	5.5	214	86-2600	7-2⅝x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	91 1/16	8x3x¼	T
65	128	1950	156	188	20000	5550	7.50/20D	8.25/20	Con 38B	6-3¾x4⅜	290	5.6	205	87-2800	7-2⅝x12	N	BL B341	4	Tim 56410H	SF	H	5.71-7.4	Tim 31000H	L4IHV	329	580	a	CD	83 1/16	8x3x¼	T
66	130	2245	164	206	20000	6270	8.25/20D	9.00/20	Con 29B	6-3 11/16x4½	288	5.4	192	78-2650	7-2⅝x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	91 1/16	8x3x¼	T
67	145	2385	176	206	20000	6390	8.25/20D	9.00/20	Con 31B	6-3⅞x4½	318	5.5	214	86-2600	7-2⅝x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	103 1/16	8x3x¼	T
68	........150X-4	2680	176	206	22000	6520	8.25/20D	9.00/20	Con 32B	6-4⅛x4½	361	5.4	252	95-2500	7-2⅝x13	Y	BL 3241	4	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103 1/16	8x3x¼	T
69	........150X-5	2710	176	206	22000	6570	8.25/20D	9.00/20	Con 32B	6-4⅛x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103 1/16	8x3x¼	T
70	........130-PS	2525	164	206	20000	6250	34x7D	9.00/20	Con 29-B	6-3 11/16x4½	288	5.4	192	78-2650	7-2⅝x13	N	Fu 5-A-43	5	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	91 1/16	8x3x¼	B
71	..........160X	3295	153	219	25000	7350	9.00/20D	9.75/22	Con 32B	6-4⅛x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Tim 58205H	SF	R	6.14-7.8	Shu 15785B	L4IHV	396	663	a	CD	83 1/16	8⅛x3x 3/16	T
72	..........170X	3640	153	219	25000	7960	9.00/20D	9.75/22	Con 33B	6-4⅛x4¾	381	4.7	276	106-2600	7-2¾x13 1/16	Y	Fu 5-A-62	5	Tim 72300H	2F	R	5.78-7.35	Shu 15785B	L4IHV	396	663	a	CD	83 1/16	8⅛x3x 3/16	T
73	..........165X	3795	153	219	28000	8150	9.75/20D	10.50/22	Con 32B	6-4⅛x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15785B	L4IHV	484	772	a	CD	83 1/16	8¼x3x⅜	T
74	..........175X	4290	153	219	30000	8550	9.00/20D	10.50/22	Con 34B	6-4⅜x4¾	427	4.6	308	118-2600	7-2¾x13 1/16	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15785B	L4IHV	484	772	a	CD	83 1/16	8¼x3x⅜	T
75	..........195X	4230	153	219	28000	8650	9.75/20D	10.50/22	Con 33B	6-4⅛x4¾	381	4.7	276	106-2600	7-2¾x13 1/16	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15785B	L4IHV	484	772	a	CD	83 1/16	8¼x3x⅜	T
76	..........220X	4930	153	219	34000	9050	10.50/20D	11.25/24	Con 34B	6-4⅜x4¾	427	4.6	308	118-2600	7-2¾x13 1/16	Y	Fu 5-A-62	5	Wis 1757H	2F	R	6.06-8.82	Shu 15795B	L4IHV	536	899	a	CD	83 1/16	8¼x3x⅜	T
77	..........240X	5130	153	219	30000	8590	9.75/20D	10.50/24	Con 35B	6-4½x5¼	501	4.5	364	135-2200	7-2¾x13 1/16	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-7.52	Shu 15785B	L4IHV	484	772	a	CD	83 1/16	8¼x3x⅜	T
78	..........260X	6030	195	219	34000	9720	10.50/22D	11.25/24	Con 35B	6-4½x5¼	501	4.5	364	135-2200	7-2¾x13 1/16	Y	Fu MHU	4	Wis 1757H	2F	R	6.06-8.82	Shu 15795B	L4IHV	536	899	a	CD	125 1/16	8¼x3x⅜	T
79	..........260S	6380	195	219	36000	10000	10.50/24D	11.25/24	Con 35B	6-4½x5¼	501	4.5	364	135-2200	7-2¾x13 1/16	Y	Fu MHU	4	Wis 1757H	2F	R	6.06-8.82	Shu 15795B	Lw4IDV	600	899	a	CD	125 1/16	8¼x3x⅜	B

80	Chev-... Mas. KC	x	450	113	113	4600	2255	6.00/16S	15-6	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	3	Own	Hy½	U	**-4.11	Own	O4IH	158	288	a	2I	38¼	5¾x2¼x 5/16	C
81	rolet... Mas. KD	x	528	123	123	5200	2415	15-6S	15-6	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	3	Own	Hy½	U	**-4.55	Own	O4IH	158	288	a	2I	48½	5 11/16x2¼x 5/16	C
82	...... Mas. WA	x	558	133	133	6700	3000	6.00/20S	6.00/20S	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	P	2I	57¾	7x2¾x 7/32	C
83	...▲... Mas. WA	x	569	133	133	7700	3060	6.00/20S‡	32x6S‡	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	P	2I	57¾	7x2¾x 7/32	C
84	...●... Mas. WA	x	590	133	133	9500	3200	6.00/20D	32x6-10p	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	P	2I	57¾	7x2¾x 7/32	C
85	(4) Mas.Spc. WA	x	712	133	133	13500	3445	6.50/20D†	32x6-10p	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	Y	Own	4	Own	HyF	U	**-6.17	Own	O4IH	330	532	P	2I	57¾	7x2¾x 7/32	C
86	......▲ Mas. WB	x	594	158	158	7700	3125	6.00/20S‡	32x6S‡	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	P	2I	83¾	7x2¾x 7/32	C
87	......● Mas. WB	x	615	158	158	9500	3265	6.00/20D	32x6-10p	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	P	2I	83¾	7x2¾x 7/32	C
88	°(4) Mas.Sp. WB	x	737	158	158	13500	3510	6.50/20D†	32x6-10p	Own	6-3½x3¾	216	6.2	168	78-3200	4-2¾x5 7/16	Y	Own	4	Own	HyF	U	**-6.17	Own	O4IH	330	532	P	2I	83¼	7x2¾x 7/32	C
89	...▲ (c.o.e.) WD	x	685	107	107	7700	3370	6.00/20S‡	32x6S‡	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	N	Own	4	Own	HyF	H	5.43-6.17	Own	O4IH	330	532	a	2I	62½	7x2¾x 7/32	C
90	...● (c.o.e.) WD	x	706	107	107	9500	3515	6.00/20D	32x6-10p	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	N	Own	4	Own	HyF	H	5.43-6.17	Own	O4IH	330	532	a	2I	62½	7x2¾x 7/32	C
91	°(4)c.o.e.Sp. WD	x	828	107	107	13500	3760	6.50/20D†	32x6-10p	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	Y	Own	4	Own	HyF	H	**-6.17	Own	O4IH	330	532	a	2I	62½	7x2¾x 7/32	C
92	▲c.o.e.Mas. WE	x	711	131	131	7700	3465	6.00/20S‡	32x6S‡	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	a	2I	86	7x2¾x 7/32	C
93	●c.o.e. Mas. WE	x	732	131	131	9500	3610	6.00/20D	32x6-10p	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	a	2I	86	7x2¾x 7/32	C
94	°(4)c.o.e.Sp. WE	x	854	131	131	13500	3855	6.50/20D†	32x6-10p	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	Y	Own	3	Own	HyF	U	**-6.17	Own	O4IH	330	532	a	2I	86	7x2¾x 7/32	C
95	▲c.o.e.Mas. WF	x	736	156	156	7700	3570	6.00/20S‡	32x6S‡	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	a	2I	111½	7x2¾x 7/32	C
96	●c.o.e. Mas. WF	x	757	156	156	9500	3715	6.00/20D	32x6-10p	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	N	Own	4	Own	HyF	U	5.43-6.17	Own	O4IH	330	532	a	2I	111½	7x2¾x 7/32	C
97	°(4)c.o.e.Sp. WF	x	879	156	156	13500	3960	6.50/20D†	32x6-10p	Own	6-3½x3¾	216	6.2	168	80-3100	4-2¾x5 7/16	Y	Own	4	Own	HyF	U	**-6.17	Own	O4IH	330	532	a	2I	111½	7x2¾x 7/32	C
98	Condor ..DZA-1		1592	131	155	10000	3200	6.00/20S	32x6-8p	W-HES XBKH	4-3¾x4¾	210	6.2	125	41-2200	3-2¼x5⅝	Y	WG T9	4	Cla R650	SF	H	4.62-6.16	Cla F182	L4IH	212	352	a	TX	60½	7x2¾x¼	T
99	(5)......DZB-1		1628	131	227	12000	3500	6.00/20S	32x6-8p	W-HES XBKH	4-3¾x4¾	210	6.2	125	41-2200	3-2¼x5⅝	Y	WG T9	4	Cla R750	SF	H	5.1-6.83	Cla F266	L4IH	233	392	a	TX	60½	7⅛x2¾x¼	T
100	(5)......DZC-1		1698	131	227	14000	3900	6.00/20S	8.25/20	W-HES XBKH	4-3¾x4¾	210	6.2	125	41-2200	3-2¼x5⅝	Y	WG T9	4	Tim 53300	SF	H	4.57-6.6	Tim 30000H	L4IH	238	402	a	TX	60½	7⅛x2¾x¼	T
101	(5)......DZD-1		1866	131	227	15000	4500	6.00/20S	8.25/20	W-HES XBKH	4-3¾x4¾	210	6.2	125	41-2200	3-2¼x5⅝	Y	WG T9A	4	Tim 54411	SF	H	4.12-6.8	Tim 30100H	L4IH	331	528	a	TX	60½	7⅛x2¾x¼	P
102	(5)......DZE-1		2015	131	227	14000	4100	6.00/20S	8.25/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 185F	4	Tim 53300	SF	H	4.57-6.2	Tim 30000H	L4IH	238	402	a	TX	60½	7⅛x2¾x¼	T
103	(5)......DZF-1		2327	131	227	15000	4900	6.50/20D	8.25/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 185F	4	Tim 54411	SF	H	4.12-6.8	Tim 31000H	L4IHV	338	578	a	TX	60½	10x2¾x 1/16	P
104	(5)......DZG-1		2572	131	227	17000	5400	7.00/20D	9.00/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 200V	5	Tim 55411	SF	H	5.71-7.4	Tim 31000H	L4IHV	338	578	a	TX	60½	10x2¾x 1/16	P
105	(5)......DZH-1		2723	131	227	19000	5600	7.00/20D	9.75/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 200V	5	Tim 56411	SF	H	4.44-7.4	Tim 32500H	L4IHV	338	578	a	TX	60½	10x2¾x 1/16	P
106	(5)......DZJ-1		2964	131	227	21500	5900	7.50/20D	10.50/20	W-HES 6BKH	6-3¾x4¼	282	6.4	174	84-2800	7-2⅝x10¼	Y	Cla 200V	5	Tim 58300	SF	H	5.25-7.8	Tim 33000H	L4IHV	384	660	a	TX	60½	10x2¾x 1/16	P
107	Corbitt........13B		1500	159	179	14500	4800	7.50/20D	8.25/20	Con A6244	6-3 7/16x4⅜	244	5.4	170	83-3200	4-2⅜x6⅝	N	Cla B116C	4	Tim 54411H	SF	H	5.83-6.80	Tim 30020H	L4IH	310	528	A	TX	79	7⅞x3½x 5/16	T
108	...........17B		2400	166	Op	18500	5700	8.25/20D	9.00/22	Con M6290	6-3¾x4⅜	290	5.5	206	87-2800	7-2⅝x12 3/16	N	Fu 5A330	5	Tim 56411H	SF	H	6.06-7.40	Tim 33000H	L4IHV	381	660	A	TX	81	8x3½x¼	T
109	...........21B		3250	167	Op	22500	7750	9.00/20D	10.50/22	Con F-602	6-4⅛x4½	361	5.4	252	95-2500	7-2⅝x13	N	Fu 5A430	5	Tim 58300H	SF	H	5.57-7.80	Tim 35000H	L4IHV	500	768	A	TX	82	8x3½x¼	T
110	...........26D		4400	168	Op	27500	8000	9.75/20D	10.50/24	Con E-603	6-4¼x4½	383	5.6	280	104-2400	7-2⅝x13	N	Fu 5A430	5	Wis 1337BH	2F	H	6.36-8.59	Tim 35000H	L4IHV	533	822	A	TX	83	8⅛x3½x 5/16	T
111	(T).......14BT		2350	142	142	25000	5600	8.25/20D	9.00/20	Con M6290	6-3¾x4⅜	290	5.5	206	87-2800	7-2⅝x12 3/16	N	Fu 5A330	5	Ti 54411TW	SF	H	5.83-6.80	Ti 31000TW	Ws4IA	348	578	A	TX	62	7⅞x3½x 5/16	T
112	(T).......17BT		2900	136	136	30000	6300	9.00/20D	9.00/20	Con M6330	6-4x4⅜	330	5.5	238	103-3000	7-2⅝x12 3/16	N	Fu 5A330	5	Tim56411TW	SF	H	5.83-6.80	Tim33000TW	Ws4IA	435	660	A	TX	59	7⅞x3½x 5/16	T
113	(T).......18BT		3250	138	138	36000	7400	9.00/20D	9.75/22	Con E-603	6-4¼x4½	383	5.6	280	104-2400	7-2⅝x13	N	Fu 5A430	5	Ti 56411TW	SF	H	6.06-7.40	Ti 33000TW	Ws4IA	435	660	A	2I	60	8x3½x¼	T
114	(T).......22BT		4340	149	149	40000	8800	9.75/20	10.50/22	Con 21-R	6-4⅜x4¾	428	5.0	325	125-2400	7-2⅝x13 1/16	N	Fu 5A620	5	Tim58301TW	SF	H	4.55-7.80	Ti 35100TW	Ws4IA	617	921	A	2I	61	8x3½x¼	T
115	(T).......27BT		4800	149	149	45000	9400	9.75/22D	10.50/24	Con 22-R	6-4½x5¼	501	5.9	400	150-2200	7-2⅝x12 3/16	N	Fu 5A620	5	Tim 59000W	2F	H	4.09-6.12	Ti 35100TW	Ws4IA	617	921	A	2I	61	8⅛x3½x 5/16	T
116	(T)..(D) D18BT		4340	138	138	35000	7800	9.00/20	9.75/22	Cum AA6	6-4x5	377	17.	270	100-2200	7-3⅞x----	Y	Fu 5A430	5	Tim 58300W	SF	H	5.57-7.80	Tim33000TW	Ws4IA	617	921	A	TX	60	8x3¼x¼	T
117	(T).(D) D27B6T		7750	152	152	45000	9500	9.75/22D	10.50/22	Cum HB	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7551	5	Tim 59000W	SF	H	4.09-6.12	Ti 35100TW	Ws4IA	617	921	A	2I	61	8⅛x3¼x 5/16	T
118	Dart..........30G		1695	139	252	12500	4540	32x6D	7.50/20	Her JXC	6-3¾x4¼	282	5.8	176	73-2800	7-2½x10 11/16	Y	Fu MLU	4	Tim 53200H	SF	H	5.14-6.20	Tim 31005H	L4IHV	302	452	a	TX	Opt	10x3x¼	T
119	...........40G		1995	139	252	14000	5190	32x6D	8.25/20	Her JXC	6-3¾x4¼	282	5.8	176	73-2800	7-2½x10 11/16	Y	Fu 5A330	5	Tim 54412H	SF	H	5.83-6.80	Tim 31005H	L4IHV	356	527	a	TX	Opt	10x3x¼	T
120	...........50G		2400	139	252	17000	5540	34x7D	9.75/20	Her JXD	6-4x4¼	320	5.6	204	84-2800	7-2½x10 11/16	Y	Fu 5A330	5	Tim 56411H	SF	H	6.16-7.40	Tim 31005H	L4IHV	440	660	a	TX	Opt	10x3x¼	T
121	.........50G sp.		2780	139	252	19000	6190	8.25/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	4.7	300	112-2500	7-2⅝x13¼	Y	Fu 5A430	5	Tim 56411H	SF	H	6.16-7.40	Tim 31005H	L4IHV	440	660	a	TX	Opt	10x3x¼	T
122	...........60G		3200	139	252	20000	6765	9.00/20D	10.50/20	Her WXC3	6-4¼x4½	383	4.7	262	106-2800	7-2⅝x13¼	Y	Fu 5A430	5	Tim 58300H	SF	H	5.57-7.80	Tim 33000H	L4IHV	440	660	a	TX	Opt	10x3x¼	T
123	..........70DR		3975	159	252	21000	7100	9.75/20D	10.50/20	Her WXC3	6-4¼x4½	383	4.7	262	106-2800	7-2⅝x13¼	Y	Fu 5A430	10	Tim 75733H	2F	H	6.85-9.41	Tim 33000H	L4IHV	513	768	a	CD	Opt	10x3x¼	T
124	...........80W		4625	139	252	23000	7994	9.75/20D	10.50/20	Wau SRKR	6-4⅝x5⅛	517	4.4	365	125-2300	7-3x14	Y	Fu 5A620	5	Tim 65725H	WF	H	6.80-10.6	Tim 35000H	L4IHV	513	768	a	CD	Opt	10x3½x 5/16	B
125	..........100W		6025	142	252	26500	9594	9.75/20D	11.25/20	Her RXLD	6-4¾x5¼	558	4.9	410	144-2200	7-3x14	Y	Fu 5A620	15	Tim 66725H	WF	H	6.02-9.20	Tim 27450H	L4IHV	529	867	a	TD	Opt	10x3½x 5/16	B
126	Diamond T.....201		575	119	119	8000	2750	6.00/16S	7.50/16	HerCBQXB3	6-3¼x4⅛	205	5.1	144	64-3000	7-2½x10 1/16	N	WG T83	3	Cla R650	SF	H	4.5-5.1	Cla F180	L4IH	212	352	a	TX	52	6x2¼x 5/16	T
127	306		660	127	150	11000	3300	6.00/17S	32x6	HerCBQXC3	6-3⅜x4⅛	221	5.8	154	69-3000	7-2½x10 1/16	N	WG T9	4	Cla R750§	SF	H	5.57-6.33	Cla F180	L4IH	232	391	a	TX	60	7½x3x¼	T
128	404		828	139	163	12200	4000	6.00/20D	32x6	HerCBJXE3	6-3½x4¼	245	5.7	170	76-2800	7-2½x10 11/16	N	Spi 2341	4	Cla R750§	SF	H	5.57-6.33	Cla F266	L4IH	253	431	a	TX	60	8 1/16x3 1/32x¼	T
129	..........404H		878	139	163	13500	4100	6.00/20D	32x6	HerCBJXE3	6-3½x4¼	245	5.7	170	76-2800	7-2½x10 11/16	N	Spi 2341	4	Cla R950§	SF	H	5.57-6.33	Cla F266	L4IH	280	471	a	TX	60	8 1/16x3 1/32x¼	T
130	406		1040	139	175	13500	4200	6.50/20D	7.50/20	Her CBJXB	6-3⅝x4¼	263	6.1	187	81-2800	7-2½x10 11/16	N	Spi 2341	4	Cla R950§	SF	H	5.57-6.33	Cla F266	L4IH	280	471	a	TX	60	8 1/16x3 1/32x¼	T
131	509		1280	151	175	14700	4650	7.00/20D	8.25/20	Her CBJXB	6-3⅝x4¼	263	6.1	187	81-2800	7-2½x10 11/16	Y	Spi 2341H	4	Cla R950§	SF	H	5.57-6.33	Cla F450	L4IHV	310	510	a	TX	72	8 1/16x3 1/32x¼	T
132	..........509H		1345	151	175	16200	4850	7.00/20D	8.25/20	Her CBJXB	6-3⅝x4¼	263	6.1	187	81-2800	7-2½x10 11/16	Y	Spi 2341H	4	Cla R1100§	SF	H	5.57-6.33	Cla F450	L4IHV	363	613	a	TX	72	8 1/16x3 1/32x¼	T
133	612		1540	151	175	16200	5000	7.50/20D	8.25/20	Her CBJXC	6-3¾x4¼	282	5.9	208	84-2800	7-2½x10 11/16	Y	Spi 2341H	4	Cla R1100§	SF	H	5.57-6.33	Cla F450	L4IHV	363	613	a	TX	72	8 1/16x3 1/32x¼	T
134	..........612H		1680	151	175	18000	5200	7.50/20D	8.25/20	Her CBJXC	6-3¾x4¼	282	5.9	208	84-2800	7-2½x10 11/16	Y	Spi 2341H	4	Cla R1300§	SF	H	5.57-6.33	Cla F450	L4IHV	403	689	a	TX	72	8 1/16x3 1/32x¼	T
135	614		1920	151	175	18000	5450	7.50/20D	9.00/20	Her CBJXD	6-4x4¼	320	5.9	224	95-2800	7-2½x10 11/16	Y	Cla 200V	5	Cla R1300§	SF	H	6.42-7.16	Cla F450	L4IHV	403	689	a	TD	72	8 1/16x3 1/32x¼	T
136	.........614DR		2243	151	175	18000	5450	8.25/20D	8.25/20	Her CBJXD	6-4x4¼	320	5.9	224	95-2800	7-2½x10 11/16	Y	Cla 200V	5	Wis 76411	2F	H	6.42-7.16	Cla F450	L4IHV	403	689	a	TD	72	8 1/16x3 1/32x¼	T
137	..........614H		2321	151	175	18800	5600	9.00/20D	9.75/20	Her CBJXD	6-4x4¼	320	5.9	224	95-2800	7-2½x10 11/16	Y	Cla 200V	5	Tim 58300§	SF	H	6.42-7.16	Cla F450	L4IHV	403	689	a	TD	72	8 1/16x3 1/32x¼	T
138	.......614HDR		2456	151	175	18800	5700	9.00/20D	9.75/20	Her CBJXD	6-4x4¼	320	5.9	224	95-2800	7-2½x10 11/16	Y	Cla 200V	5	Wis 72300	2F	H	6.42-7.16	Cla F450	L4IHV	403	689	a	TD	72	8 1/16x3 1/32x¼	T
139	805		3600	172	208	22500	7600	9.00/20D	9.75/22	Her CBWXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x13¼	Y	Cla 270V	5	Eat 18000H	SF	R	Opt.	Tim 35100H	L4IHV	460	759	A	TD	102	10⅛x3½x 5/16	T
140	806		3800	172	208	26000	8200	9.00/20D	10.50/22	Her CBWXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x13¼	Y	Cla 270V	5	Wis 1337H	2F	R	Opt.	Tim 35100H	L4IHV	545	867	A	TD	102	10⅛x3½x 5/16	T
141	.........(D) 513		2320	151	175	14700	5700	6.00/20D	8.25/20	Her DJXBL	6-3½x4½	260	14.	178	74-2600	7-3x10 7/32	Y	Spi 2341H	4	Eat A7-1350	SFD	H	Dual Rge.	Cla F450	L4IHV	363	510	a	TX	72	8 1/16x3 1/32x¼	T
142	.........(D) 615		2850	151	175	18000	6400	7.00/20D	9.00/20	Her DJXC	6-3¾x4½	298	14.	200	82-2600	7-3x10 7/32	Y	Cla 200V	5	Eat 17075	SFD	H	Dual Rge.	Cla F450	L4IHV	403	689	a	TD	72	8 1/16x3 1/32x¼	T
143	.........(D) 807		5600	172	208	26000	9000	9.00/20D	10.50/22	Cum AA600	6-4x5	377	17.	270	100-2200	7-3⅞x10 7/16	Y	Cla 270V	5	Wis 1337TW	2F	R	Opt.	Tim 35100TW	Ws4IA	569	867	A	TD	102	10⅛x3½x 5/16	T
144	.........(D) 808		5600	172	208	26000	9000	9.00/20D	10.50/22	Her DRXB	6-4⅜x5¼	474	14.	350	113-1800	7-3x13¼	Y	Cla 326	5	Wis 1337TW	2F	R	Opt.	Tim 35100TW	Ws4IA	569	867	A	TD	102	10⅛x3½x 5/16	T
145	900		5400	172	208	30000	9500	9.00/20D	10.50/24	Her RXLC	6-4⅝x5¼	529	5.4	365	132-2100	7-3½x13¼	Y	Cla 326	5	Wis 1757W	2F	R	Opt.	Tim 36020TW	Ws4IA	574	867	A	TD	102	10⅛x3½x 5/16	T
146	.....(c.f.) 306SC		775	106	150	12000	3500	6.00/17D	7.50/17	Her CBQXC3	6-3⅜x4⅛	221	5.8	154	69-3000	7-2½x10 1/16	N	WG T9	4	Cla R750§	SF	H	Opt.	Cla F352	L4IH	253	431	A	TX	60	7½x3x¼	T
147	.....(c.f.) 404SC		980	106	163	13000	4150	6.00/20D	7.50/20	HerCBJXE3	6-3½x4¼	245	5.7	170	76-2800	7-2½x10 11/16	N	Spi 2341	4	Cla R750§	SF	H	Opt.	Cla F452	L4IH	280	471	A	TX	60	8 1/16x3 1/32x¼	T
148	...(c.f.) 404SCH		1030	106	163	14700	4250	6.00/20D	8.25/20	HerCBJXE3	6-3½x4¼	245	5.7	170	76-2800	7-2½x10 11/16	N	Spi 2341	4	Cla R950	SF	H	Opt.	Cla F452	L4IH	306	471	A	TX	60	8 1/16x3 1/32x¼	T
149	....(c.o.e.) 201C		660	119	119	8000	2800	6.00/20S	32x6	HerCBQXC3	6-3⅜x4⅛	221	5.8	156	69-3000	7-2½x10 1/16	N	WG T9	4	Cla R651	SF	H	5.14-5.43	Cla F266	L4IH	253	431	a	TX	.....	6x2¼x 5/16	T
150	....(c.o.e.) 404C		1200	96	192	13500	4650	6.00/20D	7.50/20	HerCBJXE3	6-3½x4¼	245	5.7	170	76-2800	7-2½x10 11/16	N	Spi 2341	4	Cla R750§	SF	H	5.57-6.33	Cla F322	L4IHV	280	471	a	TX	72	8 1/16x3x 5/16	T
151	....(c.o.e.) 509C		1580	96	192	15500	5050	7.00/20D	8.25/20	Her CBJXB	6-3⅝x4¼	263	5.8	208	81-2800	7-2½x10 11/16	Y	Spi 2341H	4	Cla R950§	SF	H	5.57-6.33	Cla F322	L4IHV	306	510	a	TX	72	8 1/16x3x 5/16	T
152	....(c.o.e.) 612C		1850	96	192	17000	5400	7.50/20D	8.25/20	Her CBJXC	6-3¾x4¼	282	5.9	208	84-2800	7-2½x10 11/16	Y	Spi 2341H	4	Cla R1100§	SF	H	5.57-6.33	Cla F322	L4IHV	360	613	a	TX	72	8 1/16x3x 5/16	T
153	....(c.o.e.) 614C		2200	96	192	18000	6000	7.50/20D	9.00/20	Her CBJXD	6-4x4¼	320	5.9	224	95-2800	7-2½x10 11/16	Y	Cla 200V	5	Cla R1300§	SF	H	6.42-7.16	Cla F322	L4IHV	400	689	a	TD	72	8 1/16x3x 5/16	T
154	....(c.o.e.) 805C		3600	96	192	22500	7500	9.00/20D	9.75/20	Her CBWXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x13¼	Y	Cla 270V	5	Eat 18000	SF	H	Dual Rge.	Tim 35100H	L4IHV	466	759	a	TD	72	8 1/16x3x 5/16	T
155	....(c.o.e.) 806C		3700	96	192	26000	7800	9.00/20D	10.50/20	Her CBWXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x13¼	Y	Cla 270V	5	Wis 1337H	2F	H	6.85-7.37	Tim 36020H	L4IHV	545	867	a	TD	72	8 1/16x3x 5/16	T
156	(D) (c.o.e.) 513C		2540	96	192	14700	6400	6.00/20D	8.25/20	Her DJXBL	6-3½x4½	260	14.	178	74-2600	7-3x10 7/32	Y	Spi 2341H	4	Eat A7-1350	SFD	H	Dual Rge.	Cla F322	L4IHV	360	613	a	TX	72	8 1/16x3x 5/16	T
157	(D) (c.o.e.) 615C		3100	96	192	18000	7100	7.00/20D	9.00/20	Her DJXC	6-3¾x4½	298	14.	200	82-2600	7-3x10 7/32	Y	Cla 200V	5	Eat 17075	SFD	H	Dual Rge.	Tim 36020	L4IHV	460	759	a	TD	72	8 1/16x3x 5/16	T
158	.Pak-Age-Car 91		1095	90	90	6500	.....	6.00/16D	7.00/16	Lyc DC	4-3 5/16x3⅞	133	5.7	93	32-2400	3-1⅞x3⅝	Y	Col. Sp'l	3	Col. Sp'l.	....	..	**-5.30	Col. Sp'l.	B4IH	200	290	...	2I	.....	....	....
159	Pak-Age-Car 117		1195	116	116	6500	.....	6.00/16D	7.00/16	Lyc DC	4-3 5/16x3⅞	133	5.7	93	32-2400	3-1⅞x3⅝	Y	Col. Sp'l.	3	Col. Sp'l.	....	..	**-5.30	Col. Sp'l.	B4IH	200	290	...	2I	.....	....	....
160	Federal.........7		595	111	128	7000	2425	6.00/16S	6.50/16	Con F4140	4-3 5/16x4⅜	140	6.0	107	52-2500	3-2¼x4 11/16	N	WG-T89	3	Tim 51521H	SF	H	4.86-6.67	Tim 29500H	L4IH	210	308	a	TX	43⅛	6x2¼x 5/16	T
161	8		595	111	128	7000	2500	6.00/16S	6.50/16	Her QXB3F	6-3¼x4⅛	205	5.9	160	72-3500	7-2½x10 1/16	N	WG-T89	3	Tim 51521H	SF	H	4.11-4.86	Tim 29500H	L4IH	210	308	a	TX	43⅛	6x2¼x 5/16	T
162	11		655	127	164	10500	3215	6.00/20S	7.00/20	Her QXB3F	6-3¼x4⅛	205	5.9	160	72-3500	7-2½x10 1/16	N	WG T9	4	Tim 53563H	SF	H	5.14-6.20	Tim 30020H	L4IH	261	388	a	TX	51⅝	7x2⅞x 7/32	T
163	12		680	127	164	11500	3225	6.00/20S	7.50/20	Her QXC3F	6-3⅜x4⅛	221	5.5	170	76-3500	7-2½x10 1/16	N	WG T9	4	Tim 53563H	SF	H	5.14-6.20	Tim 30020H	L4IH	261	388	a	TX	51⅝	7x2⅞x 7/32	T
164	14		735	127	164	13000	3375	6.00/20S	7.50/20	Her QXC3F	6-3⅜x4⅛	221	5.5	170	76-3500	7-2½x10 1/16	N	WG T9	4	Tim 53521H	SF	H	5.14-6.66	Tim 30000H	L4IH	255	402	a	TX	51⅝	7x2⅞x 7/32	T
165	(6)...........15		795	135	250	14000	3880	6.00/20†S	8.25/20	Her JXAF	6-3⅜x4¼	228	5.9	175	72-3000	7-2½x10 11/16	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 30000H	L4IH	299	478	a	TX	56¾	8 1/16x2⅞x¼	T
166	(6)...........18		945	135	250	15000	4010	6.00/20D	8.25/20	Her JXBF	6-3⅝x4¼	263	6.1	200	82-3000	7-2½x10 11/16	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 30003H	L4IHV	302	528	a	TX	56¾	8 1/16x2⅞x¼	T
167	(6)...........20		1150	135	250	17500	4435	6.50/20D	9.00/20	Her JXBF	6-3⅝x4¼	263	6.1	200	82-3000	7-2½x10 11/16	Y	WG T9	4	Tim 54411H	SF	H	5.83-6.80	Tim 31000H	L4IHV	330	578	a	TX	56¾	8 1/16x2⅞x¼	T
168	(6)...........25		1450	135	250	19000	5190	7.00/20D	9.00/20	Her JXCF	6-3¾x4¼	282	5.9	216	86-3000	7-2½x10 11/16	Y	Cla 185F	4	Tim 55411H	SF	H	5.71-7.40	Tim 31000H	L4IHV	330	578	a	TX	56¾	8 1/16x2⅞x¼	T
169	(6)...........29		1850	135	250	20000	5300	7.50/20D	9.75/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 11/16	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 32514H	L4IHV	415	735	a	TX	56¾	8 1/16x2⅞x¼	T
170	(6-7).........29H		2080	135	250	22500	5790	8.25/20D	9.75/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 11/16	Y	Cla 205▼	5	Tim 58301H	SF	H	6.83-7.80	Tim 32514H	L4IHV	504	844	a	TX	56¾	8 1/16x2⅞x¼	T
171	(6)...........40		2800	135	250	24000	7000	9.00/20D	10.50/24	Wau 6MKRF	6-4⅛x4¾	381	5.0	290	105-2600	7-2⅝x12½	Y	Cla 270V	5	Tim 58301H	SF	H	5.57-7.80	Tim 33006H	L4IHV	504	844	a	TX	60	10⅛x3½x 5/16	T

† Rear 32 x 6-8 ply rear. ‡ 32 x 6-10 ply rear. (x) Delivered at Factory Price. Includes all Federal Taxes but does not include any state and/or local taxes. Chevrolet—(▲) Gross veh. weight, 8,000 lbs. with 32 x 6-10 ply rear tires. (●) Two speed rear axle with special tire equipment available at extra cost. (°) Gross veh. weight, 14,000 lbs. when truck is equipped with two-speed rear axle and special tire equipment at extra cost. § Diamond T—Two-speed axles optional at extra cost.

(For abbreviations see page 195)

1940 Truck Specifications

Line Number	Make and Model	Chassis List Price	Wheelbase: Minimum Standard	Wheelbase: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	Tire Sizes (D-dual rear, S-single rear): Standard Front and Rear	Tire Sizes: Maximum Authorized Tire Size (Duals unless noted)	Engine: Make and Model	Engine: No. of Cylinders, Bore and Stroke	Engine: Displacement	Engine: Comp. Ratio	Engine: Torque lb. ft.	Engine: Max. Brake H.P. at R.P.M. Given	Engine: Main Bearings Number, Diameter and Length	Governor Standard	Transmission: Make and Model	Transmission: Forward Sp'ds	Rear Axle: Make and Model	Rear Axle: Gear and Type	Rear Axle: Drive & Torque	Rear Axle: Gear Ratio Range in High	Front Axle: Make and Model	Brakes Service: Make Location Type Operat'n	Brakes Service: Lining Area	Brakes Service: Drum Area	Brakes Service: Drum Material	Brakes: Hand Location Type	C-A Dimension (Min. Std. W. B.)	Frame: Side Rail Dimensions	Frame: Type
1	Federal (6)...50	3375	135	250	28000	7700	9.00/20D	10.50/24	Wau 6MZRF	6-4¼x4¾	404	5.4	307	108-2600	7-2⅝x12½	Y	Cla 270V	5	Tim 75743H	2F	R	6.85-9.41	Tim 35011H	L4IHV	504	844	a	PD	60	10⅛x3½x 3/16	T
2	(Cont.).(6)..50H	3855	135	250	30000	8100	9.75/20D	10.50/24	Wau 6MZRF	6-4¼x4¾	404	5.4	307	108-2600	7-2⅝x12½	Y	Cla 270V	5	Tim 76736H	2F	R	7.35-9.20	Tim 35011H	L4IHV	504	844	a	PD	60	10⅛x3½x 3/16	T
3	...62	5675	141	211	35000	10200	10.50/20D	11.25/24	Con 22RF	6-4½x5¼	501	5.2	38	139-2400	7-2¾x14⅛	Y	Cla 326VO	5	Tim 76746W	2F	R	7.89-9.20	Tim36000TW	Ws4IA	620	921	a	TD	60	10 3/16x3½x 11/32	TF
4	...63	5675	141	211	35000	10050	10.50/20D	11.25/24	Wau 6SRKRF	6-4⅝x5⅛	517	5.5	400	133-2500	7-3x13⅞	Y	Cla 326VO	5	Tim 76746W	2F	R	7.89-9.20	Tim36000TW	Ws4IA	620	921	a	TD	60	10 3/16x3½x 11/32	TF
5	...65	6425	141	211	40000	11100	10.50/24D	11.25/24	Con 22RF	6-4½x5¼	501	5.2	385	139-2400	7-2¾x14⅛	Y	Cla 326VO	5	Tim 79733W	2F	R	8.59-10.11	Tim36000TW	Ws4IA	724	1051	a	TD	60	10 3/16x3½x 11/32	TF
6	...66	6425	141	211	40000	10950	10.50/24D	11.25/24	Wau 6SRKRF	6-4⅝x5⅛	517	5.5	400	133-2500	7-3x13⅞	Y	Cla 326VO	5	Tim 79733W	2F	R	8.59-10.11	Tim36000TW	Ws4IA	724	1051	a	TD	60	10 3/16x3½x 11/32	TF
7	(6)....(c.o.e.) 75	930	104	215	14000	3930	6.00/20†S	8.25/20	Her JXAF	6-3⅜x4¼	228	5.9	175	72-3000	7-2½x10 13/16	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 31100H	L4IH	299	478	a	TX	60	8 3/16x2⅞x¼	T
8	(6)....(c.o.e.) 80	1260	104	215	17500	4485	6.50/20D	9.00/20	Her JXBF	6-3⅝x4¼	263	6.1	200	82-3000	7-2½x10 13/16	Y	WG T9	4	Tim 54411H	SF	H	5.83-6.80	Tim 31102H	L4IHV	330	578	a	TX	60	8 3/16x2⅞x¼	T
9	(6).. (c.o e.) 85	1565	104	215	19000	5240	7.00/20D	9.00/20	Her JXCF	6-3¾x4¼	282	6.1	216	86-3000	7-2½x10 13/16	Y	Cla 185F	4	Tim 55411H	SF	H	5.71-7.40	Tim 32515H	L4IHV	374	654	a	TX	60	8 3/16x2⅞x¼	T
10	(6) ....(c.o.e.) 89	1945	104	215	20000	5360	7.50/20D	9.75/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 13/16	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 32515H	L4IHV	415	735	a	TX	60	8 3/16x2⅞x¼	T
11	(6-7)(c.o.e.) 89H	2175	104	215	22500	5840	8.25/20D	9.75/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 13/16	Y	Cla 205V	5	Tim 58301H	SF	H	6.83-7.80	Tim 32515H	L4IHV	504	844	a	TX	60	8 3/16x2⅞x¼	T
12	Gramm 11A	695	131	155	6500	2850	7.00/16S	7.50/16S	Her QXB3G	6-3¼x4⅛	205	5.8	144	66-3500	7-2½x10 1/16	N	WG T83	3	Spi 51-1	SF	H	**-5.10	Spi 50-1	L4IH	218	328	a	TX	60½	7x2¾x 3/16	T
13	(9)..........21A	745	131	155	10000	3000	6.00/20S	32x6-8p	Her QXB3G	6-3¼x4⅛	205	5.8	144	66-3500	7-2½x10 1/16	N	WG T9	4	Cla R650	SF	H	4.62-6.17	Cla F182	L4IH	212	352	a	TX	60½	7x2¾x 3/16	T
14	(9)..........31A	825	131	227	12000	3300	6.00/20S	32x6-8p	Her QXC3G	6-3⅜x4⅛	221	5.9	154	67-3000	7-2½x10 1/16	N	WG T9	4	Cla R750	SF	H	5.10-6.83	Cla F266	L4IH	233	392	a	TX	60½	7⅛x2¾x¼	T
15	(9)..........41A	885	131	227	14000	3750	6.00/20S	8.25/20	Her QXC3G	6-3⅜x4⅛	221	5.9	154	67-3000	7-2½x10 1/16	N	WG T9	4	Tim 53300	SF	H	4.57-6.60	Tim 30000H	L4IH	252	402	a	TX	60½	7⅛x2¾x¼	T
16	(9)..........46A	1095	131	227	14000	3900	6.00/20S	8.25/20	Her JXBG	6-3⅝x4¼	263	6.1	187	82-3000	7-2½x10 13/16	N	WG T9A	4	Tim 53300	SF	H	4.57-6.20	Tim 30000H	L4IH	252	402	a	TX	60½	7⅛x2¾x¼	T
17	(9)..........56A	1295	131	227	15000	4700	6.50/20D	8.25/20	Her JXBG	6-3⅝x4¼	263	6.1	187	82-3000	7-2½x10 13/16	N	WG T9A	4	Tim 54411	SF	H	4.12-6.80	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x 7/16	P
18	(9)..........71A	1595	131	227	17000	5200	7.00/20D	9.00/20	Her JXCG	6-3¾x4¼	282	5.9	208	85-2900	7-2½x10 13/16	N	Cla 200V	5	Tim 55411	SF	H	5.71-7.40	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x 7/16	P
19	(9)..........76A	1895	131	227	19000	5400	7.00/20D	9.75/20	Her JXDG	6-4x4¼	320	5.9	214	95-2800	7-2½x10 13/16	N	Cla 200V	5	Tim 56411	SF	H	4.41-7.40	Tim 32500H	L4IHV	334	578	a	TX	60½	10x2¾x 7/16	P
20	(9)..........86A	2195	131	227	21500	5700	7.50/20D	10.50/20	Her JXDG	6-4x4¼	320	5.9	244	95-2800	7-2½x10 13/16	N	Cla 200V	5	Tim 58300	SF	H	5.25-7.80	Tim 33000H	L4IHV	380	660	a	TX	60½	10x2¾x 7/16	P
21	(D) (9)....D46A	2420	131	227	14000	4100	6.00/20S	8.25/20	Her DJXB	6-3½x4½	260	14.	178	77-2600	7-3x10 7/32	Y	Cla 185F	4	Tim 53300	SF	H	4.57-5.66	Tim 30000H	L4IH	252	402	a	TX	60½	7⅛x2¾x¼	T
22	(D) (9)....D56A	2620	131	227	15000	4900	6.50/20D	8.25/20	Her DJXB	6-3½x4½	260	14.	178	77-2600	7-3x10 7/32	Y	Cla 185F	4	Tim 54411	SF	H	4.12-6.80	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x 7/16	P
23	(D) (9)....D71A	2875	131	227	17000	5400	7.00/20D	9.00/20	Her DJXC	6-3¾x4½	298	14.	194	84-2600	7-3x10 7/32	Y	Cla 200V	5	Tim 55411	SF	H	5.72-6.29	Tim 31000H	L4IHV	334	578	a	TX	60½	10x2¾x 7/16	P
24	(D) (9)....D76A	3245	131	227	19000	5700	7.00/20D	9.75/20	Bud 6DT-31	6-3⅝x5⅛	317	14.	224	90-2300	7-3x9⅞	Y	Cla 200V	5	Tim 56411	SF	H	4.44-7.40	Tim 32500H	L4IHV	334	578	a	TX	60½	10x2¾x 7/16	P
25	(D) (9)....D86A	4230	131	227	21500	6000	7.50/20D	10.50/20	Bud 6DT-38	6-3⅞x5½	389	14.	284	96-2100	7-3x12½	Y	Cla 270V	5	Tim 58300	SF	H	5.25-6.83	Tim 33000H	L4IHV	380	660	a	TX	60½	10x2¾x 7/16	P
26	(9)..........96A	3395	131	227	28000	8000	9.00/20D	10.50/20	HerWXLC3	6-4¼x4¾	404	5.9	294	118-2800	7-2⅝x10 31/32	Y	Cla 270V	5	Wis 1337H	2F	H	5.63-8.59	Tim 35000H	L4IHV	474	768	a	TX	60½	12x2¾x 7/16	P
27	(D) (9)....D96A	5075	131	227	28000	8100	9.00/20D	10.50/20	Bud 6DT-38	6-3⅞x5½	389	14.	284	96-2100	7-3x12½	Y	Cla 270V	5	Wis 1337H	2F	H	5.63-8.59	Tim 35000H	L4IHV	474	768	a	TX	60½	12x2¾x 7/16	P
28	..........GF	5600	150	225	24000	9050	9.75/20D	10.50/20	Her HXC	6-5¼x6	779	4.5	505	143-1600	7-3½x17	N	BL 744	4	Wis 1337H	2F	H	4.29*7.2	Tim 33000	L4IHV	474	768	a	TD	67	12x2½x¼	TP
29	Hug..........15W	1875	133	163	14000	4400	6.50/20D	8.25/20	Wau 6BM	6-3⅝x4¼	263	5.0	175	74-2500	7-2⅝x10¼	Y	Cla 185F	4	Cla 950	SF	H	**-6.83	Cla F308	L4IHV	306	510	a	T	62	8x3x¼	T
30	...19W	2125	133	163	18000	5480	7.50/20D	8.25/20	Wau 6BK	6-3¾x4¼	282	5.0	188	78-2500	7-2⅝x10¼	Y	Fu 5B330	5	Cla R1100	SF	H	**-6.83	Cla F308	L4IHV	360	613	a	T	62	8x3x¼	T
31	...23W	2275	133	163	30000	5850	7.50/20D	9.00/20	Wau 6BZ	6-4x4¼	320	5.1	210	83-2500	7-2⅝x10¼	Y	Fu 5B330	5	Cla R1100	SF	H	**-6.83	Cla F320	L4IHV	366	613	a	T	62	8x3x¼	T
32	...42W	3075	140	198	38000	6660	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	95-2200	7-2⅝x12½	Y	Fu 5A430	5	Cla 1300	SF	H	5.75-7.16	Cla F320	L4IHV	415	687	a	T	62	8x3x¼	T
33	...(D) 42W	4900	140	198	38000	7660	9.00/20D	9.75/20	Bud 6LD415	6-4x5½	415	14	308	105-2200	7-3x11½	Y	Fu 5A430	5	Cla 1300	SF	H	5.75-7.16	Cla F320	L4IHV	415	687	a	TD	62	8x3x¼	T
34	...43W	6050	140	198	50000	10500	10.50/20D	11.25/20	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	Y	Spi 7351	5	Tim 79721W	2F	H	5.34-7.97	Shu 678	W4IA	618	875	a	TD	62	9⅛x3x 3/16	T
35	...(D) 43W	7025	140	198	50000	10500	10.50/20D	11.25/20	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	Spi 7351	5	Tim 79721W	2F	H	5.34-7.97	Shu 678	W4IA	618	875	a	TD	62	9⅛x3x 3/16	T
36	...83W	2350	125	125	19500	6520	8.25/20D	9.00/20	Wau 6BK	6-3¾x4¼	282	5.0	188	78-2500	7-2⅝x10¼	Y	Fu 5B33	5	Cla 1300	SF	H	**-7.16	Cla F320	L4IHV	399	687	a	T	72	6x3 23/64x 23/64	I
37	...85W	2750	125	125	23500	7350	9.00/20D	9.75/20	Wau 6BZ	6-4x4¼	320	5.1	210	83-2500	7-2⅝x10¼	Y	Fu 5A43	5	Cla 1300	SF	H	**-7.16	Shu 632	L4IHV	415	351	a	T	72	7x3⅝x 23/64	I
38	...87W	3550	134	134	26000	8190	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	95-2200	7-2⅝x12½	Y	Fu 5A43	5	Wis 1337BM	2F	T	**-8.59	Shu 625	W2MV	331	531	a	TD	84	8x4 9/32x 23/64	I
39	...92U	5250	134	134	33500	9500	11.25/20D	12.00/24	Wau6SRKR	6-4⅝x5⅛	517	4.5	365	125-2200	7-3x13⅞	Y	Fu 5A62	5	Wis 1910	2F	T	8.88-10.0	Shu 655	W2MV	360	540	a	TD	84	8x4 21/64x 15/32	I
40	...(D) 92U	6500	134	134	33900	9915	11.25/20D	12.00/24	Cum HB4	4-4⅞x6	448	17	370	100-1800	5-4½x11½	Y	Fu 5A62	5	Wis 1910	2F	T	8.88-10.0	Shu 655	W2MV	360	540	a	TD	84	8x4 21/64x 15/32	I
41	...92H	6150	134	134	36606	11152	11.25/20D	11.25/24	Wau6SRKR	6-4⅝x5⅛	517	4.5	365	125-2200	7-3x13⅞	Y	Fu 5A62	5	Tim 79740	2F	T	10.12-1	Shu 655	2IMV	360	628	A	P	85	8x4.07x.34	I
42	...98	7450	144	144	48500	11920	12.00/24D	12.00/24	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	Y	Fu 8A86	8	Tim 79740	2F	T	7.9-10.12	Shu 1673	W4IA	727	1138	a	TD	86½	9x4 23/64x 9/16	I
43	...(D) D98	8425	144	144	48500	11920	12.00/24D	12.00/24	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	Fu 8A86	8	Tim 79740	2F	T	7.9-10.12	Shu 1673	W4IA	727	1138	a	TD	86½	9x4 23/64x 9/16	I
44	...98CD	8625	150	150	60000	14825	13.50/24D	13.50/24	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	Y	Fu 8B86	8	Own	CD	T	13.0-20.8	Shu 1673	W4IA	717	964	a	TD	89⅞	9x4 23/64x 9/16	I
45	....(D) D98CD	9600	150	150	60000	15125	13.50/24D	13.50/24	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	Fu 8B86	8	Own	CD	T	13.0-20.8	Shu 1673	W4IA	717	964	a	TD	89⅞	9x4 23/64x 9/16	I
46	...HC	5575	113	113	40000	9260	9.00/20D	9.75/20	Cat D4600	6-4¼x5½	468	16	274	72-1800	7-3x14	Y	Fu 5A620	5	Cla 1300	SF	H	5.75-7.16	Shu 632	L4IHV	506	887	a	TD	75	9⅛x3x 5/16	I
47	...16	6875	134	134	29100	11100	11.25/20D	11.25/20	Cat D4600	6-4¼x5½	468	16	274	72-1800	7-3x14	Y	Fu 5A62	5	Wis 1910	2F	T	8.88-10.0	Shu 655	W2MV	360	540	a	TD	84	8x4 21/64x 15/32	I
48	...30	8900	167	167	41920	16920	12.00/24D	13.50/24	Cat D8800	4-5¾x8	831	15	496	88-1100	5-3½x	Y	Spi 7341	4	Tim 79740	2F	T	7.9-10.12	Shu 1673	W4IA	727	1138	a	TD	89⅞	9x4 23/64x 9/16	I
49	Indiana........86	825	136	196	12000	3350	6.00/20S	7.50/20	Her JXB	6-3⅝x4¼	263	6.11	187	81-2800	7-2½x10 13/16	Y	WG T9	4	Tim 53300H	SF	H	5.14-6.6	Tim 30020H	L4IH	296	477	G	TX	56⅜	7 11/16x3x 7/32	T
50	...86S	1120	160	214	12000	4000	32x6D	7.50/20	Her JXB	6-3⅝x4¼	263	6.11	187	81-2800	7-2½x10 13/16	Y	BL-2253	5	Tim 53300H	SF	H	5.14-6.6	Tim 30020H	L4IH	296	477	G	TX	80⅜	7 11/16x3x 7/32	T
51	...87	955	136	196	14000	4000	6.50/20D	8.25/20	Her-JXB	6-3⅝x4¼	263	6.11	187	81-2800	7-2½x10 13/16	Y	WG-T9	4	Tim.54413Al	SF	H	5.83-6.8	Tim 30020H	L4IH	296	477	G	TX	56⅜	7 11/16x3x 7/32	T
52	Inter- (11)... D-2	475	113	125	4400	2240	6.00/16S	7.50/15S	Own HD213	6-3 5/16x4⅛	213	6.3	155	78-3400	4-2⅝x6 11/16	N	Own HDS	3	Own R1000	S½	H	3.72-4.18	Own F10	B4IH	191	264	c	2I	39	6x⅛x2¼	T
53	national.....D-5	450	113	125	4400	2120	6.00/16S	7.50/15S	Wau FC132	4-3¼x4	401	6.0	89	33-2800	3-3⅛x4⅛	N	Own HDS	3	Own R1000	S½	H	4.18-5.11	Own F10	B4IH	191	264	c	2I	39	6x⅛x2¼	T
54	...D-15	605	113	130	6650	2720	7.00/16S	6.00/20	Ow HD213A	6-3 5/16x4⅛	213	6.3	155	78-3400	4-2⅝x6 11/16	N	Own HDS	3	Own R1101	SF	H	4.87-5.28	Own F100	B4IH	216	308	c	2I	39	6½x 11/16x2¼	T
55	...D-30	650	128	173	13200	3410	30x5†S	7.50/20	Own HD232	6-3 5/16x4½	232	6.0	170	81-3200	4-2⅝x6 11/16	N	Own H41A	4	Own R1200	SF	H	5.28-6.66	Own F300	B4IH	293	412	c	TX	57	8x 3/16x2½	T
56	...DS-30	765	128	173	13300	3510	30x5†S	7.50/20	Own HD232	6-3 5/16x4½	232	6.0	170	81-3200	4-2⅝x6 11/16	N	Own H41A	4	Eat 1275	df	H	5.14-8.11	Own F300	B4IH	293	412	c	TX	57	8x 3/16x2½	T
57	...D-35	970	137	179	14600	4035	6.50/20D	8.25/20	Ow FAB241	6-3⅜x4½	241	5.8	175	84-3200	4-2⅝x5 11/16	Y	Own H41A	4	Own R1300	SF	H	5.62-7.16	Own F301	B4IHV	293	412	c	PX	60	8 3/16x 3/16x3	T
58	...DS-35	1085	137	179	14600	4035	6.50/20D	8.25/20	Ow FAB241	6-3⅜x4½	241	5.8	175	84-3200	4-2⅝x5 11/16	Y	Own H41A	4	Eat 1275	df	H	5.14-8.11	Own F301	B4IHV	293	412	c	PX	60	8 3/16x 3/16x3	T
59	...D-40	1365	134	176	16200	4705	7.00/20D	9.00/20	Ow FAB259	6-3½x4½	259	5.7	192	89-3200	4-2⅝x5 11/16	Y	Own F51	5	Own R1400	SF	H	5.62-7.16	Own F400	B4IHV	340	478	c	PX	60	8¾x 3/16x3	T
60	...DS-40	1550	134	176	16325	4830	7.00/20D	9.00/20	Ow FAB259	6-3½x4½	259	5.7	192	89-3200	4-2⅝x5 11/16	Y	Own F51C	5	Eat 16000	df	H	6.14-8.52	Own F400	B4IHV	340	478	c	PX	60	8¾x 3/16x3	T
61	...D-50	1975	137	179	18800	6115	7.50/20D	9.75/20	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F51	5	Own R1500	SF	H	6.43-7.16	Own F500	B4IHV	367	532	c	PX	60	8¾x 3/16x3½	T
62	...DS-50	2185	137	179	18800	6115	7.50/20D	9.75/20	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F52C	5	Eat 17050	df	H	6.43-8.74	Own F500	B4IHV	367	532	c	PX	60	8¾x 3/16x3½	T
63	...DR-50	2140	137	179	18935	6250	7.50/20D	9.75/20	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F51	5	Own R1550	2F	H	**-8.50	Own F500	B4IHV	367	532	c	PX	60	8¾x 3/16x3½	T
64	...D-60	2795	149	197	22500	7090	9.00/20D	10.50/20	Ow FBB361	6-4⅛x4½	361	5.2	268	111-2700	7-2 11/16x11 11/16	Y	Own F52	5	Own R1600	SF	H	**-6.43	Own F600	B4IHV	469	679	c	PX	72	9⅛x 3/16x3½	T
65	...DR-60	2945	149	197	22500	7090	9.00/20D	10.50/20	Ow FBB361	6-4⅛x4½	361	5.2	268	111-2700	7-2 11/16x11 11/16	Y	Own F52	5	Own R1661	2F	H	7.10-8.05	Own F600	B4IHV	469	679	c	PX	72	9⅛x 3/16x3½	T
66	...DR-70	4195	149	197	26900	8000	36x8D	40x10	Ow FBB401	6-4⅜x4½	401	5.2	308	114-2600	7-2 11/16x11 11/16	Y	Own F52	5	Own R1700	2F	H	8.05-9.03	Own F700	T4IA	617	923	G	PX	72	10x 3/16x3½	T
67	...A-8	6200	160	225	38000	11835	9.75/20D	12.00/24	Own FEB	6-5x5½	648	4.4	460	140-2100	7-3¼x17¾	Y	Own H7	5	Own 1305	2F	H	4.95-7.98	Own FW910	T4IA	617	923	G	TD	72	12⅛x3⅝x 5/16	T
68	..(e.u.s.) D-300	715	87	117	13200	3185	30x5†S	7.50/20	Ow HD232A	6-3 5/16x4½	232	6.0	170	81-3200	4-2⅝x6 11/16	N	Own H4A	4	Own R1200	SF	H	5.28-6.66	Own F450	B4IH	293	412	c	TX	71 11/16	6½x 11/16x2⅜	T
69	..(e.u.s.) DS-300	830	87	117	13300	3285	30x5†S	7.50 20	Ow HD232A	6-3 5/16x4½	232	6.0	170	81-3200	4-2⅝x6 11/16	N	Own H4A	4	Eat 1275	df	H	5.14-8.11	Own F450	B4IH	293	412	c	TX	71 11/16	6½x 11/16x2⅜	T
70	..(e.u.s.) D-500	2210	94	124	18800	6065	7.50/20D	9.00/20	OwFBB298A	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own FF51	5	Own R1500	SF	H	6.43-7.16	Own F600	B4IHV	395	572	c	PX	72	9⅛x 3/16x3½	T
71	..(e.u.s.).DS-500	2420	94	124	18800	6065	7.50/20D	9.00/20	OwFBB298A	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	OwnFF52C	5	Eat 17050	dF	H	6.43-8.74	Own F600	B4IHV	395	572	c	PX	72	9⅛x 3/16x3½	T
72	..(e.u.s.) DR-500	2375	94	124	18935	6190	7.50/20D	9.00/20	OwFBB298A	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own FF51	5	Own R1550	2F	H	**-8.50	Own F600	B4IHV	395	572	c	PX	72	9⅛x 3/16x3½	T
73	..(e.u.s.)DR-700	4250	94	142	26900	7675	36x8D	40x10	OwFBB401A	6-4⅜x4½	401	5.2	308	114-2600	7-2 11/16x11 11/16	Y	OwnFF54B	5	Own R1700	2F	H	8.05-9.03	Own F900	T4IA	617	923	G	PX	72	9⅞x¼x3½	T
74	Kenworth. (D) 505	5505	168	204	20200	7350	9.00/20D	9.75/20	Cum HB4	4-4⅞x6	448	17.	335	100-1800	5-4½x11½	Y	Fu 5A620	5	Tim 58300	SF	H	5.25-7.80	Tim 32502	L4IHV	384	659	a	TD	84	7½x3¼x½	C
75	...(D) 506	5780	168	204	24800	7700	9.00/20D	10.50/20	Cum HB4	4-4⅞x6	448	17.	335	100-1800	5-4½x11½	Y	Fu 5A620	5	Tim 75738	SF	H	6.85-8.64	Tim 32502	L4IHV	478	768	a	TD	84	7½x3¼x½	C
76	...(D) 507	6200	168	204	32000	8600	9.75/20D	10.50/22	Cum HB4	4-4⅞x6	448	17.	335	100-1800	5-4½x11½	Y	Fu 5A620	5	Tim 76738	2F	H	6.02-9.20	Tim 35100	L4IHV	510	867	a	TD	84	7½x3¼x½	C
77	...(D) 511	7661	187	205	28000	10700	9.00/22D	9.75/22	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim T18000	CF	R	6.04-10.5	Tim 36000	Ws4IA	614	922	a	TD	102	7½x3¼x½	C
78	...(D) 519	6994	190	225	26300	10200	9.00/20D	10.50/20	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim 75738	2F	H	6.85-9.41	Tim 35100	Ws4IA	704	1050	a	TD	103	7½x3¼x½	C
79	...(D) 521	7219	190	225	35000	10000	9.00/20D	10.50/20	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim 76738	2F	H	6.02-9.20	Tim 36000	Ws4IA	704	1050	a	TD	103	7½x3¼x½	C
80	...525	4729	168	204	26300	8400	9.00/20D	10.50/20	Bud LO525	6-4½x5½	525	5.5	385	135-2200	7-3x11½	Y	Fu 5A-620	5	Tim 75738	2F	H	6.85-9.41	Tim 35100	L4IHV	510	867	a	TD	84	7½x3¼x½	C
81	...526	5060	168	204	32000	8700	9.75/20D	10.50/22	Bud LO525	6-4½x5½	525	5.5	385	135-2200	7-3x11½	Y	Fu 5A-620	5	Tim 76738	2F	H	6.02-9.20	Tim 35100	L4IHV	510	867	a	TD	84	7½x3¼x½	C

† Rear 32 x 6.

81	526	5060	168	204	32000	8700	9.75/20D	10.50/22	Bud LO525	6-4½x5½	[illegible]																				
82	536	2361	159	195	16000	5350	7.50/20D	9.00/20	Her JXCM	6-3¾x4¼	282	5.7	198	83-2600	7-2½x10 13/16	Y	Fu 5B330	5	Tim 54411	SF	H	5.84-6.80	Tim 32502	L4IHV	338	578	a	TX	84	7½x3¼x½	C
83	537	2568	159	195	19000	5550	7.50/20D	9.75/20	Her JXCM	6-3¾x4¼	282	5.7	198	83-2600	7-2½x10 13/16	Y	Fu 5B330	5	Tim 56411	SF	H	6.17-7.40	Tim 32502	L4IHV	384	659	a	TX	84	7½x3¼x½	C
84	538	2739	159	195	20200	6050	8.25/20D	9.75/20	Her JXCM	6-3¾x4¼	282	5.7	198	83-2600	7-2½x10 13/16	Y	Fu 5B330	5	Tim 58300	SF	H	5.25-7.80	Tim 32502	L4IHV	384	659	a	TX	84	7½x3¼x½	C
85	........(D) 543	5103	168	204	19000	7350	7.50/20D	9.75/20	Cum AA6	6-4x5	377	17.	270	100-2200	7-3⅞x	Y	Fu 5A430	5	Tim 56411	SF	H	6.17-7.40	Tim 32502	L4IHV	384	659	a	TX	84	7½x3¼x½	C
86	........(D) 544	5273	168	204	20200	7700	8.25/20D	9.75/20	Cum AA6	6-4x5	377	17.	270	100-2200	7-3⅞x	Y	Fu 5A430	5	Tim 58300	SF	H	5.25-7.80	Tim 32502	L4IHV	384	659	a	TX	84	7½x3¼x½	C
87	........(D) 545	5684	168	204	24800	8200	9.00/20D	10.50/20	Cum AA6	6-4x5	377	17.	270	100-2200	7-3⅞x	Y	Fu 5A430	5	Tim 75738	2F	H	6.85-9.41	Tim 32502	L4IHV	478	768	a	TX	84	7½x3¼x½	C
88	553	3594	168	204	20200	7400	8.25/20D	9.75/20	Her WXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x10 21/32	Y	Fu 5A430	5	Tim 58300	SF	H	5.25-7.80	Tim 32502	L4IHV	384	659	a	TX	84	7½x3¼x½	C
89	554	3980	168	204	24800	7700	9.00/20D	10.50/20	Her WXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x10 21/32	Y	Fu 5A430	5	Tim 75736	2F	H	6.83-9.41	Tim 32502	L4IHV	478	768	a	TX	84	7½x3¼x½	C
90	555	4455	168	204	32000	8150	9.75/20D	10.50/24	Her WXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x10 21/32	Y	Fu 5A430	5	Tim 76736	2F	H	6.02-9.20	Tim 35100	L4IHV	510	867	a	TX	84	7½x3¼x½	C
91	La France- EH5B	3035	175	215	18000	7150	8.25/20D	9.00/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Tim 56411H	SF	R	5.71-7.40	Tim 35000H	L4IHV	384	804	a	TX	96	9x3¼x¼	L
92	Republic..EH5D	3100	175	215	18000	7225	8.25/20D	9.00/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Tim 76411H	2F	R	7.35-8.21	Tim 35000H	L4IHV	384	804	a	TX	96	9x3¼x¼	L
93	..........EH6B	3075	175	215	20000	7250	8.25/20D	9.75/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Tim 58300H	SF	R	5.57-7.80	Tim 35000H	L4IHV	384	794	a	TX	96	9x3¼x¼	L
94	..........EH6D	3175	175	215	20000	7325	8.25/20D	9.75/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Wis 72300H	2F	R	5.77-8.40	Tim 35000H	L4IHV	384	794	a	TX	96	9x3¼x¼	L
95	..........FH5B	3385	175	215	22000	7600	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	97-2400	7-2⅝x12½	Y	Fu 5A430	5	Tim 58300H	SF	R	5.57-7.80	Tim 35000H	L4IHV	384	794	a	TX	96	9x3¼x¼	L
96	..........FH5D	3485	175	215	22000	7675	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	97-2400	7-2⅝x12½	Y	Fu 5A430	5	Wis 72300H	2F	R	5.77-8.40	Tim 35000H	L4IHV	384	794	a	TX	96	9x3¼x¼	L
97	............HH7	3880	175	215	26000	8475	9.75/20D	10.50/22	Wau 6MZR	6-4¼x4¾	404	5.3	286	97-2400	7-2⅝x12½	Y	Fu 5A430	5	Wis 1337H	2F	R	6.85-9.41	Tim 35000H	L4IHV	463	885	a	TX	96	9x3¼x¼	L
98	............KH2	4980	175	215	27500	8900	9.75/20D	10.50/24	Wau 6SRLR	6-4⅜x5⅛	462	5.5	328	111-2400	7-3x13¼	Y	Fu 5A620	5	Wis 1337H	2F	R	6.85-9.41	Tim 35100H	L4IHV	495	983	a	TX	96	9x3¼x¼	L
99	............MH5	5715	175	215	32000	9750	9.75/20D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2400	7-3x13¼	Y	Fu 5A620	5	Wis 1757H	2F	R	6.86-9.20	Tim 26452H	L4IHV	495	971	a	TX	96	9¼x3⅝x⅜	L
100	Reo ......1A4-1C4 x	656	139	166	11500	2930	6.00/20†S	7.00/20	Own S209	6-3 5/16x4⅜	209	5.4	145	70-2800	4-2¼x5 11/16	N	Own 7B	4	Own 1A4	SF	H	5.28-6.33	Own 1A4	L4IH	246	366	C	TX	57½	7 1/16x2⅜x 7/32	T
101	........1B4-1D4	732	139	190	12500	3405	6.00/20†S	7.50/20	Own S228	6-3⅜x4¼	228	5.4	150	73-3000	7-2⅝x10 11/16	N	Own 7B	4	Own 1B4	SF	H	5.28-6.33	Own 1B4	L4IH	289	438	a	TX	57½	7 1/16x2⅜x 7/32	T
102	..........1B7M	967	105	166	13000	3630	6.00/20†S	7.50/20	Own S228	6-3⅜x4¼	228	5.4	150	73-3000	7-2⅝x10 11/16	N	Own 7B	4	Own 1B4	SF	H	5.28-6.33	Own 1B7M	L4IHV	289	438	a	TX	60½	7⅛x3x¼	T
103	....1B4H-1D4H	822	139	190	12500	3425	6.00/20†S	7.50/20	Own S3	6-3⅜x5	268	5.5	160	81-2800	7-2⅝x10 11/16	N	Own 7B	4	Own 1B4	SF	H	5.28-6.33	Own 1B4	L4IH	289	438	a	TX	57½	7 1/16x2⅜x 7/32	T
104	........2B4-2D4	989	142	190	14000	4225	6.50/20D	8.25/20	Own S3	6-3⅜x5	268	5.5	178	83-2800	7-2⅝x10 11/16	N	Own 7B	4	Own 2B4	SF	H	5.28-6.33	Own 2B4	L4IH	349	523	a	TX	60½	7 1/16x3x 7/32	T
105	.(14) 2H5Z-2J5Z	1317	142	190	16000	4650	6.50/20D	8.25/20	Own S3	6-3⅜x5	268	5.5	178	83-2800	7-2⅝x10 11/16	N	Cla 200VO	5	Own 2H5	2F	H	6.62-8.21	Own 2H5	L4IHV	349	523	c	TX	60½	7⅛x3x¼	TL
106	..........2B7M	1269	105	166	15000	4095	6.50/20D	8.25/20	Own S3	6-3⅜x5	268	5.5	178	83-2800	7-2⅝x10 11/16	N	Own 7B	5	Own 2B4	SF	H	5.28-6.33	Own 2B7M	L4IHV	349	523	a	TX	60½	7⅛x3x¼	TL
107	..3H5(3J5-3K5)	1909	153	205	19000	6280	7.50/20D	9.75/20	Own S5	6-3⅝x5	309	5.4	204	87-2800	7-2⅝x10 11/16	Y	Own 4MT	4	Own 3H5	SF	H	6.14-7.17	Own 3H5	L4IHV	407	660	c	FD	67¾	8⅛x3x¼	TB
108	..3HR5(3JR5-3KR5)	2266	153	205	21000	6470	7.50 20D	9.75/20	Own S5	6-3⅝x5	309	5.4	204	87-2800	7-2⅝x10 11/16	Y	Cla 200VO	5	Own 4H5	2F	H	** -8.5	Own 3H5	L4IHV	407	660	c	FD	67¾	8⅛x3x¼	TB
109	..4H5(4J5-4K5)	2988	156	205	22000	7270	8.25/20D	10.50/20	Buda K428	6-4⅜x4¾	428	4.7	284	104-2600	7-3x11½	Y	Spi 3353	5	Own 4H5	2F	H	** -8.5	Own 4H5	L4IHV	407	660	c	FD	67⅞	10x3x¼	TB
110	..........4WH5	3350	156	205	22000	7650	8.25/20D	10 50/20	Buda K428	6-4⅜x4¾	428	4.7	284	104-2600	7-3x11½	Y	Spi 3353	5	Own 4H5	2F	H	** -8.5	Own 4H5	Ws4IA	407	660	c	FD	67⅞	10x3x¼	TB
111	19	891	120	165	13000	3760	6.00/20†S	7.50/20	Own GC-228	6-3⅜x4¼	228	6.2	169	78-3200	7-2⅝x10.6	Y	Spi 2341	4	Tim 53308	SF	H	5.14-6.6	Tim 30000	L4IH	327	478	c	TX	60	8⅞x2 11/16x 5/16	T
112	20	1142	120	165	15000	4320	6.00/20D	8.25/20	Own GC-245	6-3½x4¼	245	6.2	182	80-3000	7-2⅝x10.6	Y	Spi 2341	4	Tim 54412	SF	H	4.85-6.8	Tim 30000	L4IH	327	478	c	TX	60	9x3x¼	T
113	21	1443	120	165	17000	4820	7.00/20D	8.25/20	Own GC-245	6-3½x4¼	245	6.2	182	80-3000	7-2⅝x10.6	Y	Spi 2341	4	Tim 55411	SF	H	5.71-7.4	Tim 31107	L4IHV	354	578	c	TX	60	9x3x¼	T
114	22	1871	120	165	19500	5825	7.50/20D	9.00/20	Own GC-288	6-3½x5	288	6.0	215	88-2800	7-2⅝x10.6	Y	Cla 231F	4	Tim 56411	SF	H	6.16-7.4	Tim 31107	L4IHV	402	663	c	TX	60	9⅛x3 1/16x 5/16	T
115	23	2467	120	165	22000	6525	8.25/20D	9.75/20	Own GC-310	6-3⅝x5	310	5.8	234	93-2700	7-2⅝x10.6	Y	Cla 205-VO	5	TW 72300	2F	H	7.35-8.4	Tim 32502	L4IHV	406	666	c	TX	60	9⅛x3 1/16x 5/16	T
116	Sterling (15) MB75	2520	178	218	18000	6300	7.50/20D	9.00/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Tim 56411H	SF	H	5.72-7.40	Tim 32502H	L4IHV	384	854	a	TX	96	9x3¼x¼	S
117	.....(15) MB85	2680	178	218	20000	6575	8.25/20D	9.75/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Tim 58300H	SF	H	5.57-7.80	Tim 32502H	L4IHV	384	840	a	TX	96	9x3¼x¼	S
118	..........MC87	3260	178	218	22000	7200	8.25/20D	9.75/20	Wau 6BZ	6-4x4¼	320	5.7	210	86-3000	7-2⅝x10 3/16	Y	Fu 5A33	5	Own TU96H	CD	R	7.74-9.56	Tim 32502H	L4IHV	384	831	a	TX	96	9x3¼x¼	S
119	...(15-16) MB90	2910	178	218	22000	6950	8.25/20D	9.75/20	Wau 6MKR	6-4¼x4¾	381	5.3	270	90-2400	7-2⅝x12½	Y	Fu 5A430	5	Tim 58300H	SF	H	5.57-7.80	Tim 33000H	L4IHV	384	797	a	TX	96	9x3¼x¼	S
120	.....(16) MC96	3600	178	218	24000	7825	9.00/20D	9.75/22	Wau 6MKR	6-4¼x4¾	381	5.3	270	90-2400	7-2⅝x12½	Y	Fu 5A430	5	Own TU96H	CD	R	7.74-9.56	Tim 33000H	L4IHV	384	831	a	TX	96	9x3¼x¼	S
121	.....(16) MD96	3250	178	218	24000	7450	9.00/20D	9.75/22	Wau 6MKR	6-4¼x4¾	381	5.3	270	90-2400	7-2⅝x12½	Y	Fu 5A430	5	Tim 75743H	2F	H	6.85-9.41	Tim 33000H	L4IHV	478	947	a	TX	96	9x3¼x¼	S
122	......(16) JB90	3385	175	215	22000	7600	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	97-2400	7-2⅝x12½	Y	Fu 5A430	5	Tim 58300H	SF	R	5.57-7.80	Tim 35000H	L4IHV	384	794	a	TX	96	9x3¼x¼	S
123	..(15-16) HD105	3770	175	215	26000	8600	9.75/20D	10.50/22	Wau 6MZR	6-4¼x4¾	404	5.3	286	97-2400	7-2⅝x12½	Y	Fu 5A430	5	Tim 75743H	2F	R	6.85-9.41	Tim 35000H	L4IHV	478	892	a	TX	96	9x3¼x¼	A
124	....(16) HD110	4895	175	215	27500	9000	9.75/20D	10.50/24	Wau 6SRLR	6-4⅜x5⅛	462	5.5	328	111-2400	7-3x13¼	Y	BL 5341	4	Tim 75743H	2F	R	6.85-9.41	Tim 35100H	L4IHV	510	990	a	TX	96	9x3¼x¼	A
125	....(16) HD115	5085	175	215	30000	9175	9.75/20D	10.50/24	Wau 6SRLR	6-4⅜x5⅛	462	5.5	328	111-2400	7-3x13¼	Y	BL 5341	4	Tim 76793H	2F	R	6.86-9.20	Tim 35100H	L4IHV	510	1030	a	TX	96	9x3¼x¼	A
126	....(16) JD135	5900	175	215	34000	10025	9.75/20D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Tim 76793W	2F	R	6.86-9.20	Ti 26452TW	Ws4IA	614	1058	a	TX	96	9x3¼x¼	A
127	....(16) JD137	5990	175	215	34000	9975	9.75/20D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Wis 1757W	2F	R	6.86-9.20	Ti 26452TW	Ws4IA	574	1003	a	TX	96	9x3¼x¼	A
128	....(16) HD145	6565	175	215	36000	10750	10.50/20D	11.25/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Wis 1910W	2F	R	7.16-10.00	Ti 26452TW	Ws4IA	574	1003	a	TX	96	9¼x3⅝x⅜	D
129	....(16) HD165	6945	175	215	40000	11800	10.50/24D	12.00/24 ¶	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Tim 79733W	2F	R	7.97-12.14	Ti 27452TW	Ws4IA	738	1191	a	TX	96	9¼x3⅝x⅜	D
130	....(16) HD175	7650	175	215	45000	12475	12.00/24●D	13.50/24 ¶	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Tim 79742W	2F	R	7.97-12.14	Ti 27452TW	Ws4IA	738	1190	a	TX	96	9¼x3⅝x⅜	D
131	....(16) HC105	4085	175	215	26000	8825	9.75/20D	10.50/22	Wau 6MZR	6-4¼x4¾	404	5.3	286	97-2400	7-2⅝x12½	Y	Fu 5A430	5	Ow TU137H	CD	R	7.35-10.75	Tim 35000H	L4IHV	500	1020	a	TX	96	9x3¼x¼	A
132	....(16) HC115	5185	175	215	30000	9375	9.75/20D	10.50/24	Wau 6SRLR	6-4⅜x5⅛	462	5.5	328	111-2400	7-3x13¼	Y	BL 5341	4	Ow TU137M	CD	R	7.40-10.82	Tim 35100H	LO4IDV	598	1118	a	TX	96	9x3¼x¼	A
133	....(16) JC115	5385	175	215	30000	9500	9.75/20D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Ow TU137W	CD	R	6.11-10.82	Tim 35000N	Ws2rIA	434	738	a	TX	96	9x3¼x¼	A
134	....(16) JC137	5715	175	215	34000	9750	9.75/20D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Ow TU137W	CD	R	6.11-10.82	Tim 26452N	Ws2rIA	434	738	a	TX	96	9x3¼x¼	A
135	....(16) HC144	5530	175	215	35000	10175	9.75/22D	11.25/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Own SS144M	CD	R	7.40-10.8	Tim 36000H	LO4IDV	658	1144	a	TX	96	9¼x3⅝x⅛	D
136	....(16) JC145	5860	175	215	36000	10125	9.75/22D	11.25/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Own IB145W	CD	R	6.11-10.82	Tim 26452N	Ws2rIA	434	738	a	JX	96	9x3¼x¼	A
137	....(16) HC145	5565	175	215	36000	10375	9.75/22D	11.25/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Own IB145W	CD	R	7.40-10.82	Tim 26452H	LO4IDV	658	1144	a	JX	96	9¼x3⅝x⅜	D
138	....(16) HC147	5910	175	215	36000	10600	9.75/22D	11.25/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Ow NR147M	CD	R	7.40-10.82	Tim 26452H	LO4IDV	658	1144	a	TX	96	9¼x3⅝x⅜	D
139	....(16) HC156	6130	175	215	40000	11050	10.50/24D	12.00/24 ¶	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Ow SR156M	CD	R	7.40-10.82	Tim 27452H	LO4IDV	658	1162	a	JX	96	9¼x3⅝x⅜	D
140	....(16) HC165	6480	175	215	40000	11275	10.50/24D	12.00/24 ¶	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Ow NR165M	CD	R	7.40-10.82	Tim 27452H	LO4IDV	638	1162	a	TX	96	9¼x3⅝x⅜	D
141	....(16) HC175	7360	175	215	45000	12600	11.25 24●D	12.75/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	5	Ow NS175W	CD	R	7.31-10.68	Ti 27452TW	Ws4IA	708	1176	a	TX	96	9¼x3⅝x⅜	D
142	....(16) HC185	8810	185	225	48000	13675	12.00/24●D	13.50/24 ¶	Wau 6RBR	6-5x5⅝	677	5.3	492	152-2200	4-3½x11	Y	Fu 4B86	4	Ow NS185W	CD	R	7.31-10.68	Ti 27452TW	Ws4IA	708	1162	as	TX	97	9¼x3⅝x⅜	D
143	....(16) HC200	10000	185	225	50000	15100	12.75 24●D	13.50/24 ¶	Wau 6RBR	6-5x5⅝	677	5.3	492	152-2200	4-3½x11	Y	Fu 4B86	12	Own SS200W	CD	R	7.31-10.68	Ti 27452TW	Ws4IA	708	1162	as	JX	97	9¼x3⅝x⅜	Y
144	....(16) HC250	11320	177	177	60000	16775	13.50/25¶D	13.50/24 ¶	Wau 6RBR	6-5x5⅝	677	5.3	492	152-2200	4-3½x11	Y	Fu 4B86	12	Ow WS250W	CD	R	7.31-10.68	Ti 27451TW	Ws4IA	708	1162	as	JX	96	12x3½x⅜	Y
145	Studebaker.....L5	640	116	....	4500	2500	6.00/16S	6.50/16	Own H	6-3 5/16x4⅜	226	6.0	173	90-3400	4 2¼x5 11/16	N	WG T88	3	Spi 41-2	Hy	H	4.55-4.82	Own L5	L4IH	150	276	C	2I	35 1/16	6¼x1¾x 5/16	T
146	..............K10	620	130	....	6720	2768	6.50/16S	32x6	Own OT	6-3 5/16x4⅜	226	6.0	152	79-3200	4-2¼x5 11/16	N	Cla 140T	3	Cla R650	SF	H	4.63-5.14	Cla F182	L4IH	188	320	F	2I	52	6x2 1/16x 5/16	T
147	..............K15	710	138	162	12000	3315	6.63/20†S	7.50/20	Own 1T	6-3 5/16x4⅜	226	6.0	170	85-3200	4-2¼x5 11/16	N	WG T9	4	Cla R750	SF	H	5.1 -6.8	Cla F266	L4IH	271	372	F	T	60	7x2¼x 5/16	T
148	...(c.o.e.) K15M	710	101	162	12000	3250	6.00/20†S	7.50/20	Own 1T	6-3 5/16x4⅜	226	6.0	170	85-3200	4-2¼x5 11/16	N	WG T9	4	Cla R750	SF	H	5.1 -6.8	Cla F280	L4IH	271	372	F	T	59⅝	7x2¼x 5/16	T
149	..............K20	1035	138	180	14500	4120	6.50/20D	8.25/20	Her JXB	6-3 5/16x4¾	263	5.8	179	80-2800	7-2½x10 11/16	N	WG T9	4	Tim 54414	SF	H	4.8 -6.8	Tim 31020N	L4IH	320	477	N	T	60	8½x3x 5/16	T
150	...(c.o.e.) K20M	1035	101	138	14500	4227	6.50/20D	8.25/20	Her JXB	6-3 5/16x4¾	263	5.8	179	80-2800	7-2½x10 11/16	N	WG T9	4	Tim 54414	SF	H	4.8 -6.8	Tim 31100N	L4IH	320	477	N	2I	59⅝	8½x3x 5/16	T
151	..............K25	1585	138	180	17000	4987	7.00/20D	9.00/20	Her JXD	6-4x4¼	320	5.6	219	86-2600	7-2½x10 11/16	Y	Cla 200V	5	Tim 56411	SF	H	6.1 -7.4	Tim 31020N	L4IH	418	644	N	2I	60	8½x3x 5/16	T
152	...(c.o.e.) K25M	1585	101	162	17000	5097	7.00/20D	9.00/20	Her JXD	6-4x4¼	320	5.6	219	86-2600	7-2½x10 11/16	Y	Cla 200V	5	Tim 56411	SF	H	6.1 -7.4	Tim 31100N	L4IH	418	644	N	T	59⅝	8½x3x 5/16	T
153	..............K30	1985	142	184	20000	5796	7.00/20†D	9.75/20	Her WXC3	6-4¼x4¾	383	5.5	268	106-2800	7-2⅝x13¾	Y	Cla 270V	5	Tim 58300	SF	H	6.1 -7.8	Tim 32507	L4IH	421	659	N	T	60	8 5/16x3x 5/16	T
154	...(c.o.e.) K30M	1985	101	166	20000	5910	7.00/20†D	9.75/20	Her WXC3	6-4¼x4¾	383	5.5	268	106-2800	7-2⅝x13¾	Y	Cla 270V	5	Tim 58300	SF	H	6.1 -7.8	Tim 32507	L4IH	421	659	N	T	59⅝	8 5/16x3x 5/16	T
155	Warford..(C) EB-9	2130	163	200	26500	6200	32x6D	8.25/20	Ford V8	8-3 1/16x3¾	221	6.1	150	85-3800	3-2.5x4.7	N	Ford-Own	8	Ford	SF	A	**-6.67	Ford RE	6IHV	501	712	A	FX	89	7¼x3x¼	C
156	.......(C) BC-9	2175	154	198	26500	6100	7.00/20D	8.25/20	Chev.	6-3½x3¾	216	6.2	170	78-3200	4-2¾x5 1/16	N	Chev-Own	8	Chev	Hy	Tu	**-6.166	Chev	6IHV	545	710	A	4I	78¾	7½x3x½	C
157	......(C) EB-9X	2235	163	200	30000	6400	7.50/20D	8.25/20	Ford V8	8-3 1/16x3¾	239	6.1	170	95-3600	3-2.5x4.7	N	Ford-Own	8	Ford	SF	A	**-6.67	Ford RE	6IHV	501	712	A	FX	89	7½x3x½	C
158	......(C) BC-9X	2175	154	198	30000	6100	7.00/20D	8.25/20	Chev.	6-3½x3¾	216	6.2	170	78-3200	4-2¾x5 1/16	N	Chev-Own	8	Chev	Hy	Tu	**-6.166	Chev	6IHV	545	710	A	4I	78¾	7½x3x½	C
159	Willys..(18) SC440	330	100	100	3450	1285	5.50/16S	6.00/16S	Own 440	4 3⅛x4⅜	134	6.1	107	58-3600	3-2.3x5.5	N	WG T84D	3	Sal 21-1	S	H	4.7-5.11	Own 440	B4IM	135	198	P	4	29⅝	3¾x1¾x 3/16	KX
160	.(18) SCOF440P	(18)	100	100	3900	1285	6.00/16S	(18)	Own 440P	4-3⅛x4⅜	134	5.7	100	48-3200	3-2.3x5.5	Y	WG T84D	3	Sal 21-1	S	H	**-5.11	Own 440P	B4IM	167	311	a	4	.....	3¾x1¾x 3/16	KX

Four-Wheel-Drive

161	Autocar (1) C-6044	5200	163	163	20000	8475	9.00/20D	9.00/20	Own 408	6-4 5/16x5¼	408	5.5	295	110-2400	7-3 1/16x13.76	Y	OwnDF4-T2	8	T-W 5004TM	2F	H	7.35-	T-W F501H	LT4IDV	417	659	c	2I	84½	9x3x¼	T
162	..........C-7044	6000	163	163	24000	10510	9.75/20D	9.75/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3 1/16x13.76	Y	OwnDF4-T2	8	T-W 72000M	2F	H	6.49-8.4	T-W F213H	T4IDV	568	866	c	2I	84	9x3x¼	T
163	..........C-8044	7250	163	163	30000	12080	10.50/20D	10.50/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3 1/16x13.76	Y	OwnTF4-T7	8	T-W 75746M	2F	H	7.37-	T-W F323H	T4IDV	676	1028	c	2I	84	10½x3x 5/16	T
164	..........C-9044	9800	150	150	38000	13720	10.50/24D	12.00/20	Her HXB	6-5x6	707	...	455	148-2000	7-3½x16⅝	Y	BL7341-T7	8	T-W 76740W	2F	H	7.35-8.5	T-W F437W	T4IA	676	1028	c	FD	83½	10½x3x 5/16	T
165	(D)...DC-10044	11000	157	157	38000	13320	10.50/24D	12.00/20	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL7341:T7	8	Tim 76740W	2F	H	7.35-8.5	Tim F-437-W	TW4IA	676	1028	a	D	84	10½x3x 5/16	Tf

† Rear 32 x 6.

† Rear 32 x 6. ● 10.50/24 single front. ¶ 11.25/24 single front. * Delivered at Factory Price. Includes all Federal Taxes but does not include any state and/or local taxes.

(For abbreviations see page 195)

1940 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear, S-single rear) Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Sp'ds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Corbitt...(10) F-12	2375	Opt	Opt	12500	4460	6.50/20D	8.25/20	Con A6244	6-3 1/16x4 3/8	244	5.4	170	83-3200	4-2 3/8x6 5/8	N	WG T9	8	Tim 53521H	SF	H	5.14-6.6	Wis F30B	L4IH	270	452	a	TX	Opt	7 7/8x3 1/2x 3/16	T
2	.......(10) F-14	3200	Opt	Opt	14500	5060	7.50/20D	8.25/20	Con M6271	6-3 5/8x4 3/8	271	5.7	191	85-2900	7-2 5/8x12 1/32	N	Cla B116C	8	Tim 54411H	SF	H	5.83-6.8	Wis F544B	L4IH	335	578	a	TD	Opt	8x3 1/2x 1/4	T
3	.......(10) F-18	4500	Opt	Opt	18500	6900	8.25/20D	9.00/20	Con E-602	6-4 1/8x4 1/2	361	5.4	252	95-2500	7-2 5/8x13	N	Fu MGU	8	Wis 5002L	2F	H	6.00-8.21	Wis F501H1	L4IH	335	578	a	TD	Opt	9x2 1/2x 1/4	D
4	.......(10) F-19	4300	Opt	Opt	19500	6500	8.25/20D	9.00/22	Con M-6330	6-4x4 3/8	330	5.5	238	103-3000	7-2 5/8x12 1/32	Y	Fu 5A330	10	Wis 5002L	2F	H	6.62-8.21	Wis F551H	L4IHV	335	578	a	TD	Opt	8x3 1/2x 1/4	T
5	.......(10) F-23	5500	Opt	Opt	23500	9000	9.00/20D	9.75/22	Con 20-R	6-4 1/8x4 3/4	381	4.8	276	106-2600	7-2 3/4x13 5/16	N	Fu 5A430	10	Wis 72300H	2F	H	5.61-8.40	Wis F213H	L4IHV	534	786	a	TD	Opt	8 1/8x3 1/2x 3/16	T
6	.......(10) F-27	6800	Opt	Opt	27500	10000	9.75/22D	10.50/22	Con 21-R	6-4 3/8x4 3/4	428	5.0	325	125-2400	7-2 3/4x13 1/16	N	Fu 5A620	10	Wis 1337BH	2F	H	6.36-8.59	Wis F313H	L4IHV	625	976	a	TD	Opt	12 1/4x3 1/4x 3/16	T
7	.......(10) F-35	8500	Opt	Opt	35500	12500	10.50/20D	11.25/24	Con 22-R	6-4 1/2x5 1/4	501	5.9	400	150-2200	7-2 5/8x12 1/32	N	Fu 5A620	10	Wis 1737KW	2F	H	6.39-9.16	Wis F417KW	Ws4IA	701	976	a	TD	Opt	12 1/4x3 1/4x 3/16	T
8	F. W. D.......HS	* 2600	132	156	13000	5460	6.50/20D	9.00/20	Wau BK	6-3 3/4x4 1/4	282	5.7	188	85-3200	7-2 5/8x10 1/4	Y	Fu 5B33	5	Ti 53543HX1	SF	H	** 7.85	Wis F33-H8	L4IHV	286	452	G	T4	68	7 11/16x2 3/4x 7/32	C
9	...........HH6	* 4380	138	170	18700	7100	9.75/20S	10.50 20	Wau MKR	6-4 1/8x4 3/4	381	5.3	270	91-2400	7-2 5/8x12 1/2	Y	Fu 5A43	5	Own HU	BF	H	6.7-8.84	Own HU	L4IHV	496	867	G	T4	85	7x3x 11/32	C
10	...........CUA	* 4640	150	182	20000	7800	9.75/20S	10.50/20	Wau MZR	6-4 1/4x4 3/4	404	5.4	288	96-2400	7-2 5/8x12 1/2	Y	Fu 5A43	5	Own 1938	BF	H	6.7-8.9	Own 1937	L4IHV	496	867	G	T4	90	7x3x 11/32	C
11	...........CU	* 4920	150	182	20000	8100	9.75/20S	10.50/20	Wau MZR	6-4 1/4x4 3/4	404	5.4	288	96-2400	7-2 5/8x12 1/2	Y	Own U	5	Own 1938	BF	H	6.7-8.9	Own 1937	L4IHV	496	867	G	T4	90	7x3x 11/32	C
12	...........SUA	* 5440	150	182	23600	8600	11.25/20S	11.25/20	Wau SRLR	6-4 3/8x5 1/8	462	5.5	330	112-2400	7-3x13 7/8	Y	Fu 5A62	5	Own 1938	BF	H	6.7-8.9	Own 1937	L4IHV	496	867	G	T4	90	7x3x 11/32	C
13	...........SU	* 5640	150	182	24000	10100	11.25/20S	11.25/20	Wau SRLR	6-4 3/8x5 1/8	462	5.5	330	112-2400	7-3x13 7/8	Y	Own U	5	Own 1938	BF	H	6.7-8.9	Own 1937	L4IHV	496	867	G	T4	90	7x3x 11/32	C
14	...........YU	* 6300	150	182	26000	10570	10.50/20D	11.25 20	Wau SRKR	6-4 5/8x5 1/8	517	5.5	369	126-2400	7-3x13 7/8	Y	Own U	5	Own 1938	BF	H	6.7-8.9	Own 1937	L4IHV	496	867	G	T4	90	8x3x 11/32	C
15	...........MJ5	* 6700	150	180	27700	11200	9.75/20D	12.75/20	Wau SRKR	6-4 5/8x5 1/8	517	5.5	369	126-2400	7-3x13 7/8	Y	Fu 5A62	5	Wis 1337	2F	H	6.6-8.6	Own 1337	L4IHV	578	976	G	T4	91	10x3x 11/32	C
16	...........MJ6	* 7040	150	180	29000	11400	10.50/20D	12.75/20	Wau SRKR	6-4 5/8x5 1/8	517	5.5	369	126-2400	7-3x13 7/8	Y	Fu 4B86	8	Wis 1337	2F	H	6.6-8.6	Own 1337	L4IHV	578	976	G	T4	91	10x3x 11/32	C
17	...........M7	* 8800	150	180	37600	12300	12.75/20S	13.50/20	Wau RBR	6-5x5 3/4	677	5.3	491	152-2400	4-3 1/2x11 3/8	Y	Fu 4B86	8	Wis 1757	2F	H	6.4-8.4	Own 1757	L4IHV	578	976	G	T4	91	10x3x 11/32	C
18	...........M10	* 10400	150	180	40000	13400	13.50/20S	13.50/24	Her HXE	6-5 3/4x6	935	5.3	615	198-2000	7-3 1/2x16 5/8	Y	Fu 4B86	8	Wis 1910	2F	H	7.12-9.3	Own 1910	W4IA	665	1030	G	T4	91	10x3x 11/32	C
19	.......(T) T26	* 2900	144	144	26000	6000	8.25/20D	9.00/20	Wau BK	6-3 3/4x4 1/4	282	5.7	188	85-3200	7-2 5/8x10 1/4	Y	Fu 5B330	5	Ti 53543HX1	SF	H	** 8.0	Wis F33-H8	L4IHV	286	452	G	T4	80	7 11/16x2 3/4x 7/32	C
20	.......(T) T32	* 3995	138	138	32000	7550	8.25/20D	9.00/20	Wau MKR	6-4 1/8x4 3/4	381	5.3	270	91-2400	7-2 5/8x12 1/2	Y	Fu 5A430	5	Ti 53543HX1	SF	H	7.8-4.1	Wis F33-H8	L4IHV	366	578	G	T4	76	10x3x 1/4	C
21	.......(T) T40	* 5450	134	134	40000	10500	9.75/20D	10.50/22	Wau SRKR	6-4 5/8x5 1/8	517	5.4	369	126-2400	7-3x13 7/8	Y	Fu 5A620	5	Own U	BF	H	7.3-11.2	Own U	L4IHV	568	868	G	T4	71	10x3x 1/4	C
22	.......(T) T45	* 7725	134	134	45000	11140	10.50/24D	10.50/24	Wau RBR	6-5x5 3/4	677	5.3	491	152-2400	4-3 1/2x11 3/8	Y	BL 7481	8	Own U	BF	H	**-8.3	Own U	W4IA	512	867	G	T4	71	10x3x 1/4	C
23	Hug..........44-4	5425	150	160	24000	9600	10.50/20S	10.50/20	Wau 6SRL	6-4 3/8x5 1/8	462	4.6	327	112-2200	7-3x12 3/8	Y	Fu 5A620	5	Wis 72000	2F	H	5.00-7.27	Wis F213	L4IHV	536	864	a	TD	70 3/4	9 1/8x3x 3/16	T
24	.........D-44-4	6840	150	160	24000	9600	10.50/20S	10.50/20	Bud 6LD468	6-4 1/4x5 1/2	468	12	345	114-2000	7-3x11 1/2	Y	Fu 5A620	5	Wis 72000	2F	H	5.00-7.27	Wis F213	L4IHV	536	864	A	TD	70 3/4	9 1/8x3x 3/16	T
25	45-4	6125	150	160	29000	11000	10.50/20S	10.50/20	Wau 6SRK	6-4 5/8x5 1/8	517	4.5	365	125-2200	7-3x13 7/8	Y	Fu 5A620	5	Wis 1337	2F	H	5.53-8.59	Wis F313	L4IHV	625	972	a	TD	70 3/4	9 1/8x3x 3/16	T
26	.........D-45-4	7500	150	160	29000	11000	10.50/20S	10.50/20	Bud 6LD468	6-4 1/4x5 1/2	468	12	345	114-2000	7-3x11 1/2	Y	Fu 5A620	5	Wis 1337	2F	H	5.53-8.59	Wis F313	L4IHV	625	972	A	TD	70 3/4	9 1/8x3x 3/16	T
27	46-4	8050	160	170	35000	11800	11.25/20S	11.25/20	Wau 6GAL	6-5x5 1/2	648	4.6	468	132-1800	7-4x18 5/8	Y	Spi 7351	5	Wis 1737	2F	H	5.75-9.16	Wis F417	W4IA	654	972	a	TD	86 1/2	10x3x 3/8	T
28	.........D-46-4	9025	160	170	35000	11800	11.25/20D	11.25/20	Cum HB6	6-4 7/8x6	672	17	500	150-1800	7-4 1/2x16 1/2	Y	Spi 7351	4 5	Wis 1337	2F	H	5.75-9.16	Wis F417	W4IA	654	972	A	TD	86 1/2	10x3x 3/8	T
29	Kenworth......539	6118	134	146	24000	19180	9.00/20D	9.75/24	Bud K428	6-4 3/8x4 3/4	428	5.3	302	108-2400	7-3x11 1/2	Y	Fu 5A62	5	Wis 72300	2F	H	5.77-8.40	Wis F207	L4IHV	458	785	a	PD	72	7 1/2x3 1/4x 1/2	C
30	540	7251	134	146	27700	10310	9.75/20D	9.75/24	Bud K428	6-4 3/8x4 3/4	428	5.3	302	108-2400	7-3x11 1/2	Y	Fu 5A62	5	Wis 1337	2F	H	6.85-9.41	Wis F323	Ws4IA	648	975	a	PD	72	7 1/2x3 1/4x 1/2	C
31	541	7835	134	146	27700	10650	9.75/20D	9.75/24	Bud LO525	6-4 1/2x5 1/2	525	5.5	385	135-2200	7-3x11 1/2	Y	Fu 5A62	5	Wis 1337	2F	H	6.85-9.41	Wis F323	Ws4IA	648	975	a	PD	72	7 1/2x3 1/4x 1/2	C
32	542	8412	134	146	35000	10935	10.50/20D	10.50/24	Bud LO525	6-4 1/2x5 1/2	525	5.5	385	135-2200	7-3x11 1/2	Y	Fu 5A62	5	Wis 1757	2F	H	6.02-8.50	Wis F427	Ws4IA	648	975	a	PD	72	7 1/2x3 1/4x 1/2	C
33	Marmon-(c) LD4-4	* 1557	113	113	4500	2695	7.50/15S	9.00/15S	Ford V8	8-3 1/16x3 3/4	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	S 3/4	U	**-4.44	Own LD4	FO4IH	162	264	ac	2I	38 1/16	5 1/2x2x.11	TDx
34	Herr...(c) OT3-4	* 1715	123	123	6800	3331	7.00/17S	9.75/18S	Ford V8	8-3 1/16x3 3/4	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	*-4.86	Own OT3	FO4IH	201	308	ac	2I	48 1/16	6x2 1/4x 3/16	T
35	.......(c) H5-4	* 1602	134	134	13200	3959	6.00/20D	10.50/18S	Ford V8	8-3 1/16x3 3/4	221	6.1	150	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-11	FO4IH	303	506	ac	TX	60 1/16	7x2 1/2x 7/32	T
36	.......(c) H6-4	* 1649	158	158	13200	4039	6.00/20D	10.50/18S	Ford V8	8-3 1/16x3 3/4	221	6.1	150	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-11	FO4IH	303	506	ac	TX	84 1/16	7x2 1/2x 7/32	T
37	..(c)(c.o.e.) H5-4	* 1875	134	134	13200	3994	6.00/20D	8.25/18	Ford V8	8-3 1/16x3 3/4	221	6.1	150	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-12	FO4IH	303	506	ac	TX	93	7x2 1/2x 7/32	T
38	..(c)(c.o.e.) H6-4	* 1910	158	158	13200	4074	6.00/20D	8.25/18	Ford V8	8-3 1/16x3 3/4	221	6.1	150	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-12	FO4IH	303	506	ac	TX	117	7x2 1/2x 7/32	T
39	.......(c) HH5-4	* 1627	134	134	13200	3959	6.00/20D	10.50/18S	Ford V8	8-3 3/16x3 3/4	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-11	FO4IH	303	506	ac	TX	60 1/16	7x2 1/2x 7/32	T
40	.......(c) HH6-4	* 1674	158	158	13200	4039	6.00/20D	10.50/18S	Ford V8	8-3 3/16x3 3/4	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-11	FO4IH	303	506	ac	TX	84 1/16	7x2 1/2x 7/32	T
41	.(c)(c.o.e.)HH5-4	* 1900	134	134	13200	3994	6.00/20D	8.25/18	Ford V8	8-3 3/16x3 3/4	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-12	FO4IH	303	506	ac	TX	93	7x2 1/2x 7/32	T
42	(c)(c.o.e.)HH6-4	* 1935	158	158	13200	4074	6.00/20D	8.25/18	Ford V8	8-3 3/16x3 3/4	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-6.67	Own IX4-12	FO4IH	303	506	ac	TX	117	7x2 1/2x 7/32	T
43	..(c) H5MB-4	* 2980	134	134	9600	4097	13.50/24S	13.50/24S	Ford V8	8-3 1/16x3 3/4	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-8.14	Own IX4-10	FO4IH	303	506	ac	TX	60 1/16	7x2 1/2x 7/32	T
44	..(c) H5MBS-4	* 4555	134	134	9600	5313	13.50/29S	13.50/24	Ford V8	8-3 1/16x3 3/4	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-9.12	Own769H-X1	FO4IH	303	506	ac	TX	60 1/16	7x2 1/2x 7/32	T
45	..(c) HH5MB-4	* 3005	134	134	9600	4097	13.50/24S	13.50/24S	Ford V8	8-3 3/16x3 3/4	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-8.14	Own IX4-10	FO4IH	303	506	ac	TX	60 1/16	7x2 1/2x 7/32	T
46	..(c)HH5MBS-4	* 4580	134	134	9600	5313	13.50/24S	13.50/24	Ford V8	8-3 3/16x3 3/4	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Ford	SF	H	**-9.12	Own769H-X1	FO4IH	303	506	ac	TX	60 1/16	7x2 1/2x 7/32	T
47	...... DSD100-4	* 3375	143	Op	13200	5070	6.50/20D	7.50/20	Her JXB	6-3 5/8x4 1/4	263	5.4	182	78-2800	7-2 1/2x10 13/16	N	WG T9WG	4	Tim MH1011	SF	H	*-6.6	TWH 101	L4IH	267	452	a	TX	60	7 11/16x2 1/2x 7/32	C
48	...... DSD200-4	* 3635	143	Op	13200	5305	7.00/20D	7.50/20	Her JXC	6-3 3/4x4 1/4	282	5.3	196	84-2800	7-2 1/2x10 13/16	N	Ful 5A33	5	Tim MH1011	SF	H	*-6.6	TWH 101	L4IH	267	452	a	TX	60	7 11/16x2 1/2x 7/32	C
49	...... DSD300-4	* 3980	143	Op	15900	5795	7.50/20D	8.25/20	Her JXD	6-4x4 1/4	320	5.3	224	95-2800	7-2 1/2x10 13/16	N	Ful 5A33	5	Tim MH1022	SF	H	*-6.8	TWH 102	L4IH	281	527	a	TX	60	7 11/16x2 1/2x 7/32	C
50	...... DSD400-4	* 5275	158	Op	19500	7812	8.25/20D	9.00/20	Her WXC3	6-4 1/4x4 1/2	383	5.0	260	106-2800	7-2 5/8x13 1/4	Y	Ful 5A430	5	Tim MH1033	SF	H	*-6.83	TWH-103	L4IH	342	578	a	FD	72	9 11/16x3x 1/4	C
51	...... DSD500-4	* 5860	158	Op	23400	8710	9.00/20D	9.75/20	Her WXLC3	6-4 1/4x4 3/4	404	5.0	293	118-2800	7-2 5/8x13 1/4	Y	Ful 5A430	5	Tim MH1044	SF	H	*-7.8	TWH 104	L4IH	384	785	a	FD	72	9 11/16x3x 1/4	C
52	...... DSD550-4	* 6440	158	Op	23400	8970	9.00/20D	9.75/20	Her RXB	6-4 1/2x5 1/4	501	4.5	330	110-2200	7-3x13 1/4	Y	Ful 5A620	5	Tim MH1044	SF	H	*-7.8	WH 104	L4IH	384	785	a	FD	72	9 11/16x3x 1/4	C
53	...DSD550DR-4	* 7350	158	Op	23400	9980	9.00/20D	9.75/20	Her RXB	6-4 1/2x5 1/4	501	5.4	360	121-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1066	2F	H	*-7.52	WH 106	L4IH	738	975	a	FD	72	9 11/16x3x 1/4	C
54	...... DSD600-4	* 7700	161	Op	23400	9730	9.00/20D	9.75/20	Her RXB	6-4 1/2x5 1/4	501	5.4	360	121-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1055	2F	H	*-7.21	WH 105	L4IH	461	785	a	FD	72	9 11/16x3x 1/4	C
55	...... DSD700-4	* 8895	161	Op	25200	10330	9.75/20D	9.75/22	Her RXB	6-4 1/2x5 1/4	501	5.4	360	121-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1077	2F	H	*-7.52	WH 107	Ws4IA	738	975	a	FD	72	10 1/16x3x 3/16	C
56	...... DSD800-4	* 9750	161	Op	30000	10880	10.50/20D	10.50/22	Her RXC	6-4 5/8x5 1/4	529	4.9	390	131-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1088	2F	H	*-8.23	WH 108	Ws4IA	738	975	a	FD	72	10 1/16x3x 3/16	C
57	...... DSD900-4	*12785	198	Op	30000	13530	10.50/20D	10.50/22	Her HXD	6-5 1/2x6	855	4.5	555	180-2200	7-3 1/2x16 5/8	Y	Ful 4A86	4	Wis MH1088	2F	H	*-8.23	WH 108	Ws4IA	738	975	a	FD	102	10 3/16x3x 3/8	P
58	..... DSD1000-4	*13850	198	Op	40000	15680	10.50/24D	10.50/24	Her HXE	6-5 3/4x6	935	4.5	610	198-2200	7-3 1/2x16 5/8	Y	Ful 4A86	4	Wis MH1099	2F	H	*-8.88	WH 109	Ws4IA	738	975	a	FD	102	10 3/16x3x 3/8	P
59	(D) DDSD200-4	* 4920	143	Op	13200	5705	7.50/20D	7.50/20	Her DJXB	6-3 1/2x4 1/2	260	14.	178	79-2600	7-3x10 7/32	N	Ful 5A33	5	Tim MH1011	SF	H	*-5.66	TWH 101	L4IH	267	452	a	TX	60	7 7/8x2 1/2x 7/32	C
60	(D) DDSD300-4	* 5155	143	Op	15900	6185	7.50/20D	8.25/20	Her DJXC	6-3 3/4x4 1/2	298	14.	208	83-2600	7-3x10 7/32	N	Ful 5A33	5	Tim MH1022	SF	H	*-5.83	TWH 102	L4IH	281	527	a	TX	60	7 7/8x2 1/2x 7/32	C
61	D DDSD550DR-4	* 9640	158	Op	23400	10590	9.00/20D	9.75/20	Her DRXB	6-4 3/8x5 1/4	474	14.	350	124-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1066	2F	H	*-6.65	WH 106	L4IH	738	975	a	FD	72	9 11/16x3x 1/4	C
62	(D) DDSD700-4	*11350	161	Op	25200	10940	9.75/20D	9.75/22	Her DRXB	6-4 3/8x5 1/4	474	14.	350	124-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1077	2F	H	*-6.65	WH 107	Ws4IA	738	975	a	FD	72	10 1/16x3x 3/16	C
63	(D) DDSD800-4	*12150	161	Op	30000	11465	10.50/20D	10.50/22	Her DRXB	6-4 3/8x5 1/4	474	14.	350	124-2200	7-3x13 1/4	Y	Ful 5A620	5	Wis MH1088	2F	H	*-7.0	WH 108	Ws4IA	738	975	a	FD	72	10 1/16x3x 3/16	C
64	(D) DDSD900-4	*15310	198	Op	30000	14230	10.50/20D	10.50/22	Her DHXB	6-5x6	707	14.	530	176-1800	7-3 3/4x17	Y	Ful 4A86	4	Wis MH1088	2F	H	*-7.22	WH 108	Ws4IA	738	975	a	FD	102	10 3/16x3x 3/8	P
65	(D) DDSD1000-4	*16105	198	Op	40000	16405	10.50/24D	10.50/24	Her DHXB	6-5x6	707	14.	530	176-1800	7-3 3/4x17	Y	Ful 4A86	..	Wis MH1099	2F	H	*-7.95	WH 109	Ws4IA	738	975	a	FD	102	10 3/16x3x 3/8	P
66	Oshkosh......JCB	* 2885	153	200	14000	5900	7.00/20D	9.00/20	Her JXC	6-3 3/4x4 1/4	282	5.3	197	85-3000	7-2 1/2x10 13/16	Y	Fu 5B33	5	Tim 54400	SF	H	4.4-5.2	Own JCB	L4IH	335	578	a	TX	71	6x3 1/2x 1/4	P
67	............JD	* 3490	153	200	15500	6050	7.50/20D	9.00/20	Her JXD	6-4x4 1/4	320	5.3	224	94-2800	7-2 1/2x10 13/16	Y	Fu 5B33	5	Tim 54400	SF	H	4.4-5.2	Own JD	L4IH	335	578	a	TX	71	6x3 1/2x 1/4	P
68	............B3S	* 5140	146	201	21500	8250	10.50/20S	10.50/20	Her WXC3	6-4 1/4x4 1/2	383	4.7	265	106-2800	7-2 5/8x13 3/4	Y	Fu 5A43	5	Own B3S	SF	H	4.8-7.8	Own B3S	L4IH	510	867	G	TX	78 3/4	7x3x 1/2	TfL
69	............B3D	* 5590	146	201	23000	8250	10.50/20S	10.50/20	Her WXC3	6-4 1/4x4 1/2	383	4.7	265	100-2400	7-2 5/8x13 3/4	Y	Fu 5A43	5	Own B3D	2F	H	5.0-8.4	Own B3D	L4IH	560	867	G	TX	78 3/4	7x3x 1/2	TfL
70	............C3S	* 5635	146	201	23800	8700	9.75/20D	11.25/20	Her YXC2	6-4 1/2x4 3/4	453	4.4	300	100-2400	7-3x14	Y	Fu 5A620	5	Own C3S	SF	H	6.0-7.8	Own C3S	L4IH	518	867	G	TX	82	7x3x 1/2	TfL
71	............C3D	* 6185	146	201	24000	9575	9.75/20D	11.25/20	Her YXC2	6-4 1/2x4 3/4	453	4.4	300	100-2400	7-3x14	Y	Fu 5A620	5	Own C3D	2F	H	5.6-8.4	Own C3D	L4IH	630	975	G	TX	82	7x3x 1/2	TfL
72	..........W-500	* 6165	150	204	25000	10600	10.50/20S	11.25/20	Her RXB	6-4 1/2x5 1/4	500	5.4	330	110-2200	7-3x12 3/4	Y	Fu 5A620	5	Own 500	2F	H	7.2-8.6	Own 500	L4IH	630	975	G	TX	82	8 1/4x3x 3/8	Tf
73	..........W-600	* 6750	150	204	26000	11100	10.50/20D	11.25/20	Her RXBO	6-4 1/2x5 1/4	500	5.4	360	121-2200	7-3x12 3/4	Y	Fu 5A620	10	Own 600	2F	H	7.27-8.6	Own 600	L4IH	630	975	G	TX	82	8 1/4x3x 3/8	Tf
74	..........W-700	* 6900	150	204	29000	11500	10.50/20D	11.25/20	Her RXCO	6-4 5/8x5 1/4	529	5.4	380	128-2200	7-3x12 3/4	Y	Fu 5A620	10	Own 700	2F	H	7.27-8.6	Own 700	L4IH	630	975	G	TX	82	10 1/8x3x 3/8	Tf
75	..... W-800	* 7975	150	204	31500	12300	10.50/20D	12.00/20	Her RXLD	6-4 3/4x5 1/4	558	5.4	405	141-2200	7-3x12 3/4	Y	Fu 5A620	10	Own FD	2F	H	8.05-9.15	Own FD	L4IH	630	975	G	TX	82	10 1/8x3x 3/8	Tf
76	............BG3	* 9200	168	190	38000	14200	13.50/20S	12.75/20	Her HXB	6-5x6	707	4.5	455	148-2000	7-3 1/2x16 5/8	Y	Spi 7341	4	Own BG	2F	H	4.7-6.8	Own BG3	B4IM	666	975	G	TX	85	10x3 1/4x 1/2	L
77	............GD	*10400	168	190	40000	14500	13.50/20S	12.75/20	Her HXE	6-5 3/4x6	935	4.5	610	199-2000	7-3 1/2x16 5/8	Y	Spi 7341	4	Own GD	2F	H	5.3-7.4	Own GD	B4IM	666	975	G	TX	85	10x3 1/4x 1/2	L
78	Walter.......FND	* 4900	126	150	20000	7500	9.75/20S	9.00/20	Wau WMK	6-4 1/8x4 3/4	381	5.0	270	90-2200	7-2 5/8x10 1/4	Y	Own FJN	6	Own FNB	2D	H	6.0-8.0	Own FN	O4IA	450	670	G	FI	84	7x2 3/4x 1/4	T
79	..........FMD	* 6200	126	150	24000	8500	9.00/20D	9.75/20	Wau WSRL	6-4 3/8x5 1/8	462	5.0	325	110-2200	7-3x13 7/8	Y	Own FJD	6	Own FMB	2D	H	6.0-8.0	Own FM	O4IA	450	670	G	FI	84	12x3 1/2x 1/2	TB
80	........FKMD	* 7000	126	150	28000	9000	9.75/20D	10.50/20	Wau SRKR	6-4 5/8x5 1/8	517	5.5	369	125-2200	7-3x13 7/8	Y	Own FJD	6	Own FJB	2D	H	6.0-8.0	Own FJ	O4IA	450	670	G	FI	84	12x3 1/2x 1/2	TB

(*) Prices includes chassis and cab

81	..........FCKD		*8400	126	138	30000	10500	9.75/24D	10.50/24	Wau SRKR	6-4⅝x5⅛	517	5.5	369	125-2200	7-3x13⅞	Y	Own FC	6	Own FCC	2D	H	7.5-9.0	Own FC	O4IA	450	670	G	FI	84	13x3¾x½	TB
82	...........FCS		*8600	138	162	30000	11000	9.75/24D	10.50/24	Wau SRKR	6-4⅝x5⅛	517	5.5	369	125-2200	7-3x13⅞	Y	Own FC	6	Own FCC	2D	H	7.5-9.0	Own FC	O4IA	560	670	D	FI	96	14x3¾x½	TB
83	...........FBS		*9900	138	162	31000	12000	10.50/24D	10.50/24	Wau RBR	6-5x5¾	677	5.3	485	150-2100	4-3½x11⅜	Y	Own FA	6	Own FCC	2D	H	7.5-9.0	Own FC	O4IA	560	890	D	FI	96	14x3¾x½	TB
84	..........FBRS		*10500	138	162	46000	13000	11.25/24D	12.00/24	Wau WRB	6-5x5¾	677	5.5	465	150-2200	4-3½x11⅜	Y	Own FA	6	Own FCR	2D	H	7.5-9.0	Own FCR	O4IA	560	890	D	FI	96	14x3¾x½	TB
85	..........FXBS		*10700	138	162	31000	12000	10.50/24D	10.50/24	Her HXE	6-5¾x6	935	5.3	610	200-2000	7-3½x16⅝	Y	Own FA	6	Own FCC	2D	H	7.5 -9.1	Own FC	O4IA	560	890	D	FI	108	14x3¾x½	TB
86	.....(D) ADKD		*10000	126	138	29000	12000	9.75/24D	10.50/24	Her DRXB	6-4⅜x5¼	474	14.	350	125-2000	7-3x13¼	Y	Own FA	6	Own FCC	2D	H	7.5 -9.1	Own FC	O4IA	560	890	D	FI	96	14x3¾x½	TB
87	......(D) ADBS		*11000	138	162	32000	13000	10.50/24D	10.50/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16	Y	Own FA	6	Own FCC	2D	H	7.5 -9.1	Own FC	O4IA	560	890	D	FI	108	14x3¾x½	TB
88	......(D) ADVD		*12500	126	162	65000	17000	13.50/24D	13.50/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16	Y	Own FA	6	Own AV	2D	H	** 10.5	Own AV	O4IA	620	1020	D	FI	96	16x4x⅝	TB
	Six-Wheelers	**Wheels Driven**																														
89	(2) Autocar (1)																															
90	.....C-4062	2F	3150	164	182	32000	9165	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	FD	84	9x3x¼	Tf
91	.....C-7062	2F	4550	164	182	36000	11600	9.00/20D	9.75/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own C	2F	H	7.20-8.57	Tim 35100	LO4IDV	580	930	c	FD	84	9x3x¼	Tf
92	.....C-8062	2F	5300	164	200	40000	12040	9.75/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF5	5	Own C	2F	H	7.20-8.57	Tim 26452	LO4IDV	580	930	c	FD	84	10⅜x3x¼	TL
93	.....C-9062	2F	6050	182	222	45000	13040	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own TF5	5	Own CG	2F	H	7.69-8.52	Tim 26452	TWs4IA	631	930	c	FD	102	10½x3x 5/16	TL
94	(D) DC-10062	2F	8000	216	216	68000	15870	9.75/20D	....	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL7341:A3	12	Own GD	2F	H	4.4 -6.97	Tim 27452	TO4IA	631	930	a	D	125¾	9x3x¼	Tf
95	c.o.e. U-4062	2F	3350	106	124	32000	9135	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	FD	84	9x3x¼	Tf
96	e.u.s. U-7062	2F	5200	128	145	36000	11580	9.00/20D	9.75/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.20-8.57	Tim 35100	LO4IDV	580	930	c	FD	103¼	9x3x¼	Tf
97	e.u.s. U-8062	2F	5500	128	145	40000	12760	9.75/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF5	5	Own C	2F	H	7.20-8.57	Tim 26452	LO4IDV	580	930	c	FD	103¼	9x3x¼	Tf
98	e.u.s. U-9062	2F	6100	128	145	45000	13600	9.75/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	Own CG	2F	H	7.69-8.52	Tim 26452	TWs4IA	631	930	c	FD	103¼	10½x3x 5/16	T
99	.....C-4064	4R	4500	139	139	32000	10480	9.00/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	T-W SD252H	2F	T	7.66-8.44	Tim 35100	T4IHV	667	1191	c	FD	59	9x3x¼	TfL
100	.....C-7064	4R	6000	142	182	36000	11060	9.00/20D	9.75/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	T-WSD252W	2F	T	7.66-8.44	Tim 35100	TWs4IA	798	1191	c	FD	62	9x3x¼	TfL
101	.....C-8064	4R	8200	142	182	40000	14170	9.75/20D	9.75/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own TF5	5	TWSDD353W	2F	T	8.15-9.11	Tim 26452	TWs4IA	998	1519	c	FD	62	10⅜x3x¼	TL
102	.....C-9064	4R	9000	142	142	52000	15100	10.50/24D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Ow TF4:A3	12	TWSDD454W	2F	T	8.15-9.11	Tim 26452	TWs4IA	998	1519	c	FD	62	10½x3x 5/16	TL
103	(D) DC-10064	4R	13000	145	145	62000	19450	11.25/24D	....	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	BL7341:3A	12	Tim SD462W	2F	T	7.7 -8.98	Tim 27452	TW6IA	998	1519	a	D	71	10½x3x 5/16	L
104	e.u.s. U-7064	4R	6500	109	109	36000	14075	9.00/20D	9.75/20	Own 408	6-4 1/16x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF5	5	T-WSD252W	2F	T	7.66-8.44	Tim 35100	TWs4IA	798	1191	c	FD	84¼	9x3x¼	TfL
105	e.u.s. U-8064	4R	8500	109	118	40000	14060	9.75/20D	9.75/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	TWSDD353W	2F	T	8.15-9.11	Tim 26452	TWs4IA	998	1519	c	FD	84¼	9x3x¼	TfL
106	e.u.s. U-9064	4R	9000	109	146	50000	14060	10.50/24D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	TWSDD454W	2F	T	8.15-9.11	Tim 26452	TWs4IA	998	1519	c	FD	84¼	9x3x¼	TfL
107	Cor-(10)35SB2	2F	4800	Opt	Op	35000	9100	9.00/20D	9.75/22	Con E603	6-4¼x4½	383	5.6	280	104-2400	7-2⅝x13	N	Fu 5A430	5	Ti SBT1500TW	SF	A	6.06-7.40	Ti 33000TW	Ws6IA	636	1094	a	TD	Opt	8⅛x3½x 5/16	T
108	bitt(10)40SB2	2F	5800	Opt	Op	40000	10700	9.75/20D	10.50/22	Con 21R	6-4⅜x4¾	428	5.0	325	125-2400	7-2⅝x13 5/16	N	Fu 5A620	5	Ti SBT 252W	SF	A	4.55-7.80	Ti 35100TW	Ws6IA	668	1193	a	TD	Opt	8⅛x3½x 5/16	T
109	(10)..18SB4	4R	3950	Op	Op	18000	5800	7.00/20D	7.50/20	Con A6244	6-3 5/16x4⅜	244	5.4	170	83-3200	4-2⅜x6⅝	N	Cla B116C	4	Ti SBD800H	SF	A	6.26-8.05	Tim 30020H	L6IHV	382	608	a	TX	Opt	8x3½x¼	T
110	(10)..18SB2	2F	2000	Opt	Op	18000	5300	7.00/20D	7.50/20	Con A6244	6-3 5/16x4⅜	244	5.4	170	83-3200	4-2⅜x6⅝	N	Cla B116C	4	Ti SBT800H	SF	A	5.14-6.60	Tim 30020H	L6IHV	382	608	a	TX	Opt	8x3½x¼	T
111	(10)..25SB2	2F	3750	Opt	Op	25000	7670	8.25/20D	9.00/20	Con M6290	6-3¾x4⅜	290	5.5	206	87-2800	7-2⅝x12 5/32	N	Fu 5A330	5	Ti SBT1000TW	SF	A	4.86-6.80	Ti 31000TW	Ws6IA	574	930	a	TX	Opt	8x3½x¼	T
112	(10)..25SB4	4R	5720	Op	Op	25000	9000	8.25/20D	9.00/20	Con M6290	6-3¾x4⅜	290	5.5	206	87-2800	7-2⅝x12 5/32	N	Fu 5A330	5	Ti SBD1000TW	SF	A	5.93-8.30	Ti 31000TW	Ws6IA	574	930	a	TX	Opt	8x3½x¼	T
113	(10)..35SB4	4R	6380	Op	Op	35000	10000	9.00/20D	9.75/22	Con E603	6-4¼x4½	383	5.6	280	104-2400	7-2⅝x13	N	Fu 5A430	5	TimSBD1500	SF	A	5.41-9.03	Ti 33000TW	Ws6IA	636	1094	a	TD	Opt	8⅛x3½x 5/16	T
114	(10)..40SB4	4R	8800	Op	Op	40000	11500	9.75/20D	10.50/22	Con 21R	6-4⅜x4¾	428	5.0	325	125-2400	4-2⅝x13 5/16	N	Fu 5A620	5	Tim SD252W	2F	A	5.90-8.40	Ti 35100TW	Ws6IA	668	1193	a	TD	Opt	8⅛x3½x 5/16	T
115	(10)..18SB6	6	5500	Op	Op	18000	7300	7.00/20D	8.25/20	Con A6244	6-3 5/16x4⅜	244	5.4	170	83-3200	7-2⅜x6⅝	N	Cla B116C	8	Ti SBD800H	SF	A	4.57-6.60	Wis F30B	L6IHV	396	678	a	TX	Opt	8x3½x¼	T
116	(10)..25SB6	6	7500	Op	Op	25000	8200	8.25/20D	9.00/22	Con M6330	6-4x4⅜	330	5.5	238	103-3000	7-2⅝x12 5/32	N	Fu 5A330	10	TimSBD1000	SF	A	4.86-6.80	Wis F544H	Ws6IA	574	930	a	TD	Opt	8x3½x¼	T
117	(10)..40SD6	6	8900	Op	Op	40000	11700	9.00/20D	9.75/22	Con 22R	6-4½x5¼	501	5.9	400	150-2200	7-2⅝x12 5/32	N	Fu 5A620	10	Ti SD252TW	2F	A	6.41-9.33	Wis F209TW	Ws6IA	685	1220	a	TD	Opt	12x3½x¼	T
118	(10)..50SD6	6	12300	Op	Op	50000	14600	9.75/20D	10.50/22	Her HXC	6-5¼x6	779	5.3	555	178-2100	7-3½x17	N	Spi 7551	10	Tim SD352W	2F	A	7.33-9.11	Wis F310W	Ws6IA	1084	1626	a	TD	Opt	12¼x3¼x 5/16	T
119	(10)..54SD6	6	16900	Op	Op	54000	15400	9.75/22D	10.50/22	Her HXC	6-5¼x6	779	5.3	555	178-2100	7-3½x17	N	BL 7541	8	Tim SD452W	2F	A	7.33-9.11	Wis F311W	Ws6IA	1084	1625	a	TD	Opt	12¼x3¼x 5/16	T
120	Dart.....1000	4R	4050	161	268	24500	7540	32x6D	9.00/20	Her JXD	6-4x4¼	320	5.6	204	84-2800	7-2½x10¼	Y	Fu 5A330	5	Ti SBD1000H	2F	T	5.93-8.30	Tim 31005H	L6IHV	537	930	a	TX	Opt	10x3x¼	L
121	1500	4R	5200	161	268	30000	10140	34x7D	9.75/20	Her WXC3	6-4¼x4½	383	4.7	262	106-2800	7-2⅝x13 11/16	Y	Fu 5A430	5	TimSBD1500	2F	T	5.41-9.03	Tim 33000H	L6IHV	603	1095	a	TX	Opt	10x3x¼	L
122	252	4R	5600	152	268	33000	12794	34x7D	9.00/20	Her WXC3	6-4¼x4½	383	4.7	262	106-2800	7-2⅝x13¼	Y	Fu 5A430	10	Tim SD252H	2F	T	5.90-8.44	Tim 33000H	L6IHV	603	1095	a	TD	Opt	10x3x¼	B
123	352	4R	9850	156	261	39000	15594	9.75/20D	10.50/24	Her RXLD	6-4¾x5⅛	558	4.9	410	144-2200	7-3x14	Y	Fu 5A620	12	Tim SD352W	2F	T	7.33-10.2	Ti 27450TW	Ws6IA	874	1517	a	TD	Opt	10x3½x 5/16	B
124	Dia.T.614-252H	4R	3895	177	227	32000	9200	9.00/20D	9.00/20	Her CBJXD	6-4x4¼	320	5.9	244	95-2800	7-2½x10 11/16	Y	Cla 200V	10	Tim SD252H	2F	R	Opt.	Cla F324	W6IA	737	1122	A	TD	107	8 5/16x3 5/16x¼	TF
125	806W-252TW	4R	5450	156	234	33000	10500	9.00/20D	9.75/22	Her CBWXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim SD252TW	2F	R	Opt.	Tim 35100W	W6IA	798	1292	A	TD	86	10⅛x3½x 5/16	T
126	900W-353W	4R	7975	168	234	40000	13000	9.75/20D	9.75/24	Her RXLC	6-4⅝x5¼	529	5.4	365	122-1800	7-3x13¼	Y	B-L 6241&703	8	Tim SD353W	2F	R	Opt.	Tim 36020TW	W6IA	1006	1617	A	TD	98	10⅛x3½x 5/16	T
127	900W-454W	4R	8665	168	234	50000	14000	10.50/20D	10.50/24	Her RXLC	6-4⅝x5¼	529	5.4	365	122-1800	7-3x13¼	Y	B-L 6241&703	8	Tim SD454W	2F	R	Opt.	Tim 36020TW	W6IA	1006	1617	A	TD	98	10⅛x3½x 5/16	TF
128	Federal...202	2F	1950	162	215	21000	6450	7.00/20D	7.50/20	Her JXBF	6-3⅝x4¼	263	6.1	200	82-3000	7-2½x10 11/16	Y	WG T9	4	Tim SBT800	SF	R	5.83-6.80	Tim 31000H	L6IHV	475	828	a	TD	83	8 5/16x2⅞x¼	TP
129	204	4R	2550	162	215	22000	7000	7.00/20D	7.50/20	Her JXBF	6-3⅝x4¼	263	6.1	200	82-3000	7-2½x10 11/16	Y	WG T9	4	Tim SBD800	SF	R	7.11-8.30	Tim 31000H	L6IHV	475	828	a	TD	83	8 5/16x2⅞x¼	TP
130	252	2F	2545	162	215	25000	7450	7.50/20D	8.25/20	Her JXCF	6-3¾x4¼	282	5.9	216	86-3000	7-2½x10 11/16	Y	Cla 185F	4	Tim SBT1000	SF	R	5.83-6.80	Tim 31000H	L6IHV	531	930	a	TD	83	8 5/16x2⅞x¼	TP
131	254	4R	3000	162	215	26000	7850	7.50/20D	8.25/20	Her JXCF	6-3¾x4¼	282	5.9	216	86-3000	7-2½x10 11/16	Y	Cla 185F	4	TimSBD1000	SF	R	5.93-8.30	Tim 31000H	L6IHV	531	930	a	TD	83	8 5/16x2⅞x¼	TP
132	292	2F	3290	162	215	30000	8450	8.25/20D	9.00/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 11/16	Y	Cla 205V	5	Tim SBT155	SF	R	6.16-7.40	Tim 32514H	L6IHV	657	1168	a	TD	83	8 5/16x2⅞x¼	TP
133	294	4R	3900	162	215	32000	9000	8.25/20D	9.00/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 11/16	Y	Cla 205V	5	TimSBD1500	SF	R	6.44-9.03	Tim 32514H	L6IHV	657	1168	a	TD	83	8 5/16x2⅞x¼	TP
134	402	2F	4275	162	215	33000	9950	9.00/20D	9.00/20	Wau 6MKRF	6-4⅛x4¾	381	5.0	290	105-2600	7-2⅝x12½	Y	Cla 270V	5	Tim SBT251	SF	R	5.57-7.80	Tim 33006H	L6IHV	835	1386	a	TD	87	10⅛x3½x 5/16	TB
135	502	2F	5990	162	215	36000	11500	9.00/20D	10.50/20	Wau 6MZRF	6-4¼x4¾	404	5.4	307	108-2600	7-2⅝x12½	Y	Cla 270V	5	Tim SDT352	2F	R	6.85-9.41	Tim 35011H	Ws6IA	964	1418	a	TD	87	10⅛x3½x 5/16	TB
136	504	4R	5075	162	215	36000	10800	9.00/20D	9.75/20	Wau 6MZRF	6-4¼x4¾	404	5.4	307	108-2600	7-2⅝x12½	Y	Cla 270V	5	TimSBD1500	SF	R	6.44-9.03	Tim 35011H	L6IHV	657	1168	a	TD	87	10⅛x3½x 5/16	TB
137	........504A	4R	6675	162	215	40000	12300	9.00/20D	10.50/20	Wau 6MZRF	6-4¼x4¾	404	5.4	307	108-2600	7-2⅝x12½	Y	Cla 270V	5	Tim SDD352	2F	R	7.33-9.11	Ti 35000TW	Ws6IA	964	1418	a	TD	87	10⅛x3½x 5/16	TB
138	..(c.o.e.) 802	2F	2040	127	180	21000	6500	7.00/20D	7.50/20	Her JXBF	6-3⅝x4¼	263	6.1	200	82-3000	7-2½x10 11/16	Y	WG T9	4	Tim SBT800	SF	R	5.83-6.80	Tim 31102H	L6IHV	475	828	a	TD	83	8 5/16x2⅞x¼	TP
139	..(c.o.e.) 852	2F	2645	127	180	25000	7500	7.50/20D	8.25/20	Her JXCF	6-3¾x4¼	282	5.9	216	86-3000	7-2½x10 11/16	Y	Cla 185F	4	Tim SBT1000	SF	R	5.83-6.80	Tim 32515H	L6IHV	575	1006	a	TD	83	8 5/16x2⅞x¼	TP
140	..(c.o.e.) 892	2F	3355	127	180	30000	8500	8.25/20D	9.00/20	Her JXDF	6-4x4¼	320	5.9	244	95-2800	7-2½x10 11/16	Y	Cla 205V	5	Tim SBT155	SF	R	6.16-7.40	Tim 32515H	L6IHV	657	1168	a	TD	83	8 5/16x2⅞x¼	TP
141	F.W.D.....MJ6X6		*11575	184	204	40000	17200	10.50/20D	12.75/20	Wau SRKR	6-4⅝x5⅛	517	5.5	369	126-2400	7-3x13⅞	Y	Fu 4B86	8	Wis SD352	2F	R	7.33-9.56	Own 1337	W6IA	1085	1680	G	T6	120	10x3x 11/32	PC
142	..........M6X6		*14555	204	228	52400	18200	13.50/20S	12.75.20	Wau RBR	6-5x5¾	677	5.3	491	152-2400	4-3½x11⅜	Y	Fu 4B86	8	Wis SD520	2F	R	9.68-11.1	Own 1910	W6IA	1085	1680	G	T6	145	10x3x 11/32	PC
143	Hug.....98MB	4R	13000	189	189	80000	21500	12.00/24D	12.00/24	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	Y	Fu 8B86	8	Own	CD	T	13.0-20.8	Shu 1673	W6IA	1149	1602	a	TD	81¾	9x3x 5/16	T
144	..(D) 98MB	4R	13975	189	189	80000	22250	12.00/24D	12.00/24	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4x18⅝	Y	Fu 8B86	8	Own	CD	T	13.0-20.8	Shu 1673	W6IA	1149	1602	a	TD	81¾	9x3x 5/16	T
145	......99MA	4R	15266	189	189	110000	26500	13.50/24D	13.50/24	Wau 6GAK	6-5½x5½	784	4.8	550	155-1800	7-4x18⅝	Y	Fu 8A860	8	Own	CD	T	13.0-20.8	Shu 1673	W6IA	1437	2134	a	TD	85¾	10x3½x⅜	T
146	99	4R	9300	175	175	64000	15100	11.25/20D	11.25/20	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	Y	Spi 7341	4	Tim SD452	2F	T	7.33-10.2	Shu 1673	W6IA	1027	1581	a	TD	92	9x4 11/32x 5/16	I
147	.....(D) 99	4R	10275	175	175	64000	15100	11.25/20D	11.25/20	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4x18⅝	Y	Spi 7341	4	Tim SD452	2F	T	7.33-10.2	Shu 1673	W6IA	1027	1581	a	TD	92	9x4 11/32x 5/16	I
148	998	4R	11300	175	175	75000	18140	12.75/20D	12.75/20	Wau 6GAL	6-5x5½	648	4.6	468	132-1800	7-4x18⅝	Y	Spi 7341	4	Tim SD520	2F	T	7.33-10.2	Shu 1673	W6IA	1027	1581	a	TD	92	9x4 11/32x 5/16	I
149	.....(D) 998	4R	12275	175	175	75080	11400	12.75/20D	12.75/20	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4x18⅝	Y	Spi 7341	4	Tim SD520	2F	T	7.33-10.2	Shu 1673	W6IA	1027	1581	a	TD	92	9x4 11/32x 5/16	I
150	36	4R	10865	186	186	65000	15800	11.25/20D	12.75/20	Cat D8800	4-5¾x8	831	15	496	88-1100	5-3½x—	Y	Spi 7341	4	Tim SD452	2F	H	** -10.2	Shu 1673	W6IA	1027	1581	a	TD	94	9x4 11/32x 5/16	I
151	........36S	4R	12865	186	186	76000	18840	11.25/20D	12.75/20	Cat D8800	4-5¾x8	831	15	496	88-1100	5-3½x—	Y	Spi 7341	4	Tim SD520	2F	T	** -10.1	Shu 1673	W6IA	1027	1581	a	TD	92	9x4 11/32x 5/16	I
152	Interna- (11) tional D186T	2F	1475	148	191	18000	5290	6.50/20D	7.50/20	Own HD232	6-3 5/16x4½	232	6.0	170	81-3200	4-2⅝x6 11/16	N	Own H41A	4	Own RT1200	SF	HT	6.16-6.60	Own F301	B6IHV	465	648	C	TX	77	8¼x 3/16x3 3/16	T
153	....DS186T	2F	1590	148	191	18000	5390	6.50/20D	7.50/20	Own HD232	6-3 5/16x4½	232	6.0	170	81-3200	4-2⅝x6 11/16	N	Own H41A	4	Eat 1275	df	HT	5.14-8.11	Own F301	B6IHV	465	648	C	TX	77	8¼x 3/16x3 3/16	T
154	....D-216-T	2F	1760	176	194	21000	6270	7.00/20D	8.25/20	OwnFab-241	6-3⅜x4½	241	5.8	175	84-3200	4-2⅜x5 11/16	N	Own H41A	4	Own RT-1400	SF	HT	6.50-7.16	Own F-400	B6IHV	564	780	C	PX	102	8 3/16x 3/16x3 3/16	T
155	....DS216-T	2F	1945	176	194	21000	6395	7.00/20D	8.25,20	OwnFab-241	6-3⅜x4½	241	5.8	175	84-3200	4-2⅜x5 11/16	N	Own H41A	4	Eat 16000	df	HT	6.14-8.52	Own F400	B6IHV	564	780	C	TX	102	8 3/16x 3/16x3 3/16	T
156	....D-246-F	4R	3300	161	215	24000	8320	7.50/20D	36x8	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F51	5	Own RF1401	SF	HT	8.19-13.1	Own FX500	B6IHV	560	816	C	PX	84	9¼x⅜x3 3/16	T
157	....D-246-T	2F	2850	161	215	24000	8065	7.50/20D	9.00/20	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F51	5	Own RT1500	SF	HT	7.16-1.	Own FX500	B6IHV	589	855	C	PX	84	9¼x⅜x3 3/16	T
158	...DS-246-T	2F	3060	161	215	24000	8065	7.50/20D	9.00/20	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F52C	5	Eat 17050	df	HT	6.43-8.74	Own FX500	B6IHV	589	855	C	PX	84	9¼x⅜x3 3/16	T
159	...DR-246-T	2F	3015	161	215	24000	8200	7.50/20D	9.00/20	Ow FBB298	6-3¾x4½	298	5.7	218	94-2800	7-2 11/16x11 11/16	Y	Own F51	5	Own RT1550	2F	HT	** -8.50	Own FX500	B6IHV	589	855	C	PX	84	9¼x⅜x3 3/16	T
160	....D-346-F	4R	5900	161	215	34000	11095	9.00/20D	9.75/20	Ow FBB401	6-4⅛x5	401	5.2	308	114-2600	7-2 11/16x11 11/16	Y	Own F52	5	Own RF1610	SF	HT	7.93-12.7	Own F700	T6IA	801	1192	G	PX	84	10⅛x⅜x3 3/16	T
161	...DR-346-T	2F	5000	161	215	34000	10125	9.00/20D	9.75/20	Ow FBB401	6-4⅛x5	401	5.2	308	114-2600	7-2 11/16x11 11/16	Y	Own F52	5	Own RT1660	SF	HT	8.05-9.03	Own F700	T6IA	801	1192	G	PX	84	10⅛x⅜x3 3/16	T
162	....DR426F	4R	7500	161	233	42000	12635	9.75/20D	10.50/20	Own FBB450-A	6-4⅜x5	451	5.2	331	120-2400	7-2 11/16x11 11/16	Y	Own F54	5	Own RF1701	2F	HT	8.05-9.03	Own F800	T6IA	801	1192	G	PX	84	11⅛x⅜x3 3/16	T
163	....AR-626F	4R	12500	180	253	62000	18155	9.75/24D	11.25/24	Own FEB	6-5x5½	648	4.4	460	140-2100	7-3¼x17¾	Y	Own H7	5	Own 1585	2F	RT	9.64-11.3	Own FW910	T6IA	1028	1520	C	TD	92	14x⅜x3½	TL

(*) Price includes Chassis & Cab.

(For abbreviations see page 195)

1940 Truck Specifications

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE: Minimum Standard	WHEELBASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear, S-single rear): Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Ken-..(D) 509 4R	7046	212	254	35000	10350	9.00/20D	9.75/22	Cum HB4	4-4⅞x6	448	17.	335	100-1800	7-4½x11½	Y	Fu 5A620	5	Tim SW252	WF	R	6.20-9.25	Tim 35100	L6IHV	668	1192	a	TD	102	7½x3¼x½	C
2	worth. (D) 510 2F	8697	221	247	39000	12630	9.00/22D	9.75/22	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim T18000	CF	R	6.04-10.5	Tim 36000	Ws4rIA	692	1030	a	TD	134	7½x3¼x½	C
3	....(D) 512 4R	8334	205	235	38000	13500	9.00/20D	9.75/22	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim SW252	WF	R	6.20-9.25	Tim 36000	Ws4rIA	800	1194	a	TD	120	7½x3¼x½	C
4	....(D) 520 2F	7886	214	239	40300	12200	9.00/20D	10.50/22	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim 75738	2F	H	6.85-9.41	Tim 36000	Ws4rIA	782	1158	a	TD	127	7½x3¼x½	C
5	....(D) 522 2F	8061	214	239	46000	12150	9.00/20D	10.50/22	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim 76738	2F	H	6.02-9.2	Tim 36000	Ws4rIA	782	1158	a	TD	127	7½x3¼x½	C
6	....(D) 523 4R	9149	214	239	42000	13700	9.00/20D	10.50/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim SW352	WF	R	5.40-10.2	Tim 36000	Ws4rIA	800	1194	a	TD	127	7½x3¼x½	C
7	....(D) 524 4R	9410	214	239	54000	14700	9.75/20D	10.50/24	Cum HB6	6-4⅞x6	672	17.	500	150-1800	7-4½x16½	Y	BL 7341	4	Tim SW452	WF	R	6.0-11.7	Tim 36000	Ws4rIA	980	1450	a	TD	127	7½x3¼x½	C
8	.........527 4R	5942	204	234	35000	11000	9.00/20D	9.75/22	Bud LO525	6-4½x5½	525	5.5	385	135-2200	7-3x11½	Y	Fu 5A-620	5	Tim SW-252	WF	R	6.20-9.25	Tim 35100	Ws4rIA	800	1194	a	TD	120	7½x3¼x½	C
9	.........528 4R	7289	211	236	39000	12400	9.75/20D	10.50/24	Bud LO525	6-4½x5½	525	5.5	385	135-2200	7-3x11½	Y	Fu 5A-620	5	Tim SW-352	WF	R	5.40-10.2	Tim 35100	Ws4rIA	800	1194	a	TD	127	7½x3¼x½	C
10	....(D) 546 4R	6909	204	234	33500	10950	9.00/20D	9.75/22	Cum AA6	6-4x5	377	17.	270	100-2200	7-3⅞x	Y	Fu 5A-430	5	Tim SW252	WF	R	6.20-9.25	Tim 32502	L6IHV	636	1093	a	TX	120	7½x3¼x½	C
11	.........556 4R	5429	204	234	35000	10750	9.00/20D	9.75/22	HerWXLC3	6-4¼x4¾	404	5.5	294	118-2800	7-2⅝x10 21/32	Y	Fu 5A430	5	Tim SW252	WF	A	5.00-11.0	Tim 35100	L4rIHV	800	1194	a	TX	120	7½x3¼x½	C
	Marmon-Herr.																														
12	...... DSD200-6	* 5980	167	Op	19500	8065	7.00/20D	7.00/20	Her JXC	6-3¾x4¼	282	5.3	196	84-2800	7-2½x10 13/16	N	Ful 5A33	5	Wis MH1100	2F	R	*-7.36	WH 110	L6IH	549	930	a	TX	84	7 15/16x2½x¼	P
13	...... DSD300-6	* 6700	167	Op	25500	9025	7.50/20D	8.25/20	Her JXD	6-4x4¼	320	5.3	224	95-2800	7-2½x10 13/16	N	Ful 5A33	5	Wis MH1111	2F	R	*-7.66	WH 111	L6IH	600	1055	a	TX	84	7 15/16x2½x¼	P
14	...... DSD400-6	* 7700	158	Op	26500	9600	8.25/20D	9.00/20	Her WXC3	6-4¼x4½	383	5.0	260	106-2800	7-2⅝x13¼	Y	Ful 5A430	5	Wis MH1111	2F	R	*-9.33	WH 111	L6IH	600	1055	a	FD	72	9 15/16x3x¼	P
15	...... DSD500-6	* 9015	158	Op	32500	10400	8.25/22D	9.00/20	HerWXLC3	6-4¼x4¾	404	5.0	293	118-2800	7-2⅝x13¼	Y	Ful 5A430	5	TW MH1133	2F	R	*-9.33	WH 113	Ws6IA	726	1300	a	FD	72	9 15/16x3x¼	P
16	...... DSD600-6	*10570	173	Op	32500	12200	9.00/20D	9.00/20	Her RXB	6-4½x5¼	501	4.5	330	110-2200	7-3x13¼	Y	Ful 5A620	5	TW MH1133	2F	R	*-8.43	WH 113	Ws6IA	726	1300	a	FD	84	9 15/16x3x¼	P
17	...... DSD800-6	*11920	173	Op	42000	14475	9.75/20D	9.75/22	Her RXC	6-4⅝x5¼	529	4.9	390	131-2200	7-3x13¼	Y	Ful 5A620	5	TW MH1144	2F	R	*-8.14	WH 114	Ws6IA	1056	1626	a	FD	84	10 1/16x3x 5/16	P
18	...... DSD900-6	*14000	192	Op	42000	17590	9.75/20D	9.75/22	Her HXD	6-5½x6	855	4.5	555	180-2200	7-3½x16⅝	Y	Ful 4A86	4	TW MH1144	2F	R	*-9.11	WH 114	Ws6IA	1056	1626	a	FD	96	10 3/16x3x⅜	P
19	..... DSD1000-6	*16000	198	Op	52000	19200	10.50/20D	10.50/24	Her HXE	6-5¾x6	935	4.5	610	198-2200	7-3½x16⅝	Y	Ful 4A86	4	TW MH1155	2F	R	*-9.11	WH 115	Ws6IA	1056	1626	a	FD	102	10⅛x3x⅜	P
20	(D) DDSD200-6	* 7255	167	Op	19500	8465	7.00/20D	7.00/20	Her DJXB	6-3½x4½	260	14.	178	79-2600	7-3x10 7/32	N	Ful 5A33	5	W MH1100	2F	R	*-6.66	WH 110	L6IH	549	930	a	TX	84	7 5/16x2½x¼	P
21	(D) DDSD300-6	* 7975	167	Op	25500	9425	7.50/20D	8.25/20	Her DJXC	6-3¾x4½	288	14.	208	83-2600	7-3x10 7/32	N	Ful 5A33	5	W MH1111	2F	R	*-6.41	WH 111	L6IH	600	1055	a	TX	84	7 15/16x2½x¼	P
22	(D) DDSD600-6	*13025	173	Op	32500	12800	9.00/20D	9.00/20	Her DRXB	6-4⅜x5¼	474	14.	350	124-2200	7-3x13¼	Y	Ful 5A620	5	TW MH1133	2F	R	*-7.66	WH 113	Ws6IA	726	1300	a	FD	84	9 15/16x3x¼	P
23	(D) DDSD800-6	*14375	173	Op	42000	15060	9.75/20D	9.75/22	Her DRXB	6-4⅜x5¼	474	14.	350	124-2200	7-3x13¼	Y	Ful 5A620	5	TW MH1144	2F	R	*-8.14	WH 114	Ws6IA	1056	1626	a	FD	84	10 1/16x3x 5/16	P
24	(D) DDSD900-6	*16650	192	Op	42000	18325	9.75/20D	9.75/22	Her DHXB	6-5x6	707	14.	530	176-1800	7-3¾x17	Y	Ful 4A86	4	TW MH1144	2F	R	*-8.14	WH 114	Ws6IA	1056	1626	a	FD	96	10 3/16x3x⅜	P
25	(D) DDSD1000-6	*18400	198	Op	52000	19950	10.50/20D	10.50/24	Her DHXB	6-5x6	707	14.	530	176-1800	7-3¾x17	Y	Ful 4A86	4	TW MH1155	2F	R	*-8.14	WH 115	Ws6IA	1056	1626	a	FD	102	10 3/16x3x⅜	P
26	.........(c) H5-6	* 2627	156	156	22000	5474	6.00/20D	10.50/18S	Ford V8	8-3 1/16x3¾	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-11	FO6IH	503	836	ac	TX	82 1/16	7½x2½x¼	TL
27	.........(c) H6-6	* 2672	180	180	22000	5595	6.00/20D	10.50/18S	Ford V8	8-3 1/16x3¾	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-11	FO6IH	503	836	ac	TX	106 1/16	7½x2½x¼	TL
28	(c) (c.o.e.) H5-6	* 2900	156	156	22000	5508	6.00/20D	8.25/18	Ford V8	8-3 1/16x3¾	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-12	FO6IH	503	836	ac	TX	115	7½x2½x¼	TL
29	(c) (c.o.e.) H6-6	* 2945	180	180	22000	5630	6.00/20D	8.25/18	Ford V8	8-3 1/16x3¾	221	6.1	155	85-3800	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-12	FO6IH	503	836	ac	TX	139	7½x2½x¼	TL
30	.......(c) HH5-6	* 2652	156	156	22000	5474	6.00/20D	10.50/18S	Ford V8	8-3 3/16x3¾	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-11	FO6IH	503	836	ac	TX	82 1/16	7½x2½x¼	TL
31	.......(c) HH6-6	* 2697	180	180	22000	5595	6.00/20D	10.50/18S	Ford V8	8-3 3/16x3¾	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-11	FO6IH	503	836	ac	TX	106 1/16	7½x2½x¼	TL
32	(c) (c.o.e.)HH5-6	* 2925	156	156	22000	5508	6.00/20D	8.25/18	Ford V8	8-3 3/16x3¾	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-12	FO6IH	503	836	ac	TX	115	7½x2½x¼	TL
33	(c) (c.o.e.)HH6-6	* 2970	180	180	22000	5630	6.00/20D	8.25/18	Ford V8	8-3 3/16x3¾	239	6.1	170	95-3600	3-2.5x5 21/32	N	Ford	4	Tim Ford	SF	R	**-6.67	Own IX4-12	FO6IH	503	836	ac	TX	139	7½x2½x¼	TL
	Sterling																														
34	(16)HBT128 2C	4840	181	227	32000	10625	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	99-2400	7-2⅝x12½	Y	Fu 5A430	5	TimSBT252H	SF	L	5.57-7.80	Tim 35000N	L4rIHV	504	968	a	TX	102	9x3¼x¼	D
35	(15-16)HWS128 4R	5325	181	227	32000	10775	9.00/20D	9.75/20	Wau 6MZR	6-4¼x4¾	404	5.3	286	99-2400	7-2⅝x12½	Y	Fu 5A430	5	Tim SW251H	WF	L	6.20-10.40	Tim 35000N	L4rIHV	504	968	a	TX	102	9x3¼x¼	D
36	(15-16)JWS160 4R	8165	201	241	40000	12775	9.75/20D	10.50/20	Wau6SRKR	6-4⅝x5⅛	517	5.5	368	125-2300	7-3x13¼	Y	Fu 5A62	5	TimSW352W	WF	L	6.00-10.67	Tim 26452N	Ws4rIA	800	1348	a	TX	122	9x3¼x¼	D
37	(15-16)HWS235S4R	9090	201	241	50000	13575	10.50/20D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	368	125-2300	7-3x13¼	Y	Fu 5A62	5	TimSW452W	WF	L	6.00-10.25	Tim 27452N	Ws4rIA	800	1316	a	TX	122	9¼x3⅝x⅜	D
38	(16)HCS235 4R	10820	211	251	52000	15250	9.75/22D	10.50/24	Wau6SRKR	6-4⅝x5⅛	517	5.5	369	125-2300	7-3x13¼	Y	Fu 5A62	15	Own SR255W	CD	R	10.73-13.25	Tim 27452N	Ws4rIA	868	1368	s	JX	123	9¼x3⅝x⅜	D
39	(16)HCS265 4R	12350	211	251	60000	16400	10.50/20D	11.25/24	Wau 6RBR	6-5x5¾	677	5.3	492	152-2200	4-3½x11	Y	Fu 4B86	12	Own SR265W	CD	R	10.76-13.56	Tim 27452N	Ws4rIA	868	1368	s	JX	123	9¼x3⅝x⅜	D
40	(16)HCS297 4R	13850	211	251	70000	18300	10.50/24†S	11.25/24‡S	Wau 6RBR	6-5x5¾	677	5.3	492	152-2200	4-3½x11	Y	Fu 4B86	12	Own SR330W	CD	R	10.76-15.37	Tim 27452N	Ws4rIA	988	1552	a	JX	123	9¼x3⅝x⅜	Y
41	(16)HCS330 4R	15200	180	180	80000	20100	10.50/24††S	11.25/24‡‡S	Wau 6RBR	6-5x5¾	677	5.3	492	152-2200	4-3½x11	Y	Fu 4B86	12	Own SR330W	CD	R	10.76-15.37	Tim 27451N	Ws4rIA	988	1552	a	JX	99	12x3½x⅜	Y
	Truckstell																														
42	(c)TRC-2X250 2F	1653	154	216	22000	5900	7.00/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev	4	Eat 1325	SFd	U	5.83-8.57	Chev	C6IHV	511	729	c	2I	81	7½x3x 15/32	C
43	(c)TRC-2X400 2F	1869	157	218	26000	6100	7.50/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev	4	Eat 1465	SFd	U	6.5-9.02	Chev	B6IHV	511	729	c	2I	83	7½x3x 15/32	C
44	(c)TRC-2X250 2F	1893	152	202	23000	6050	7.00/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev	4	Eat 1325	SFd	U	5.83-8.57	Chev	C6IHV	511	729	c	2I	81	7½x3x 15/32	C
45	(c)TRC-2X400 2F	2109	154	204	27000	6250	7.50/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev	4	Eat 1465	SFd	U	6.5-9.02	Chev	B6IHV	511	729	c	2I	83	7½x3x 15/32	C
46	(c)TRC-4XC26C 4R	2119	141	212	26000	6500	7.50/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev-0	8	Chev	SFd	H	**-6.4	Chev	C61HV	511	729	c	2I	66	7½x3x 15/32	C
47	(c)TRC-4XC29E 4R	2481	141	212	29000	7100	7.50/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev-0	8	Eat 1325	SFd	H	6.88-9.56	Chev	C61HV	511	729	e	2I	66	7½x3x 15/32	C
48	(c)TRC-4XC27C 4R	2338	116	186	27000	6690	7.50/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev-0	8	Chev	SFd	H	**-6.4	Chev	C61HV	511	729	c	2I	71	7½x3x 15/32	C
49	(c)TRC-4XC30E 4R	2695	116	186	30000	7280	7.50/20xD	8.25/20	Chev	6-3¾x3½	216	6.2	170	78-3200	4-2¾x5 7/16	N	Chev-0	8	Eat 1325	SFd	H	6.88-9.56	Chev	C61HV	511	729	c	2I	71	7½x3x 15/32	C
50	(c)TRF-2X250 2F	1623	155	252	22000	5900	7.00/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	N	Ford	4	Eat 1350	SFd	H	5.83-8.57	Ford	F6IHV	501	836	a	TX	81½	7½x3x 15/32	C
51	(c)TRF-2X400 2F	1880	156	253	26000	6000	7.50/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	N	Ford	4	Eat 1450	SFd	H	6.5-9.02	Ford	F6IHV	501	836	a	TX	83	7½x3x 15/32	C
52	(c)TRF-2X250 2F	1813	122	241	23000	5950	7.00/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	N	Ford	4	Eat 1350	SFd	H	5.83-8.57	Ford	F6IHV	501	836	a	TX	81½	7½x3x 15/32	C
53	(c)TRF-2X400 2F	2079	123	242	27000	6050	7.50/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	N	Ford	4	Eat 1450	SFd	H	6.5-9.02	Ford	F6IHV	501	836	a	TX	83	7½x3x 15/32	C
54	(c)TRF-4XF26F 4R	2130	143	210	26000	6600	7.50/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	N	Ford-0	8	Ford	SFd	H	6.88-7.87	Ford	F6IHV	501	836	a	TX	67¾	7½x3x 15/32	C
55	(c)TRF-4XF29E 4R	2342	143	210	29000	7200	7.50/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	Y	Ford-0	8	Eat 1350	SFd	H	6.88-9.56	Ford	F6IHV	501	836	a	TX	67¾	7½x3x 15/32	C
56	(c)TRF-4XF27F 4R	2280	117	180	27000	6720	7.50/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	Y	Ford-0	8	Ford	SFd	H	6.88-7.87	Ford	F6IHV	501	836	a	TX	77¼	7½x3x 15/32	C
57	(c)TRF-4XF30E 4R	2583	117	180	30000	7380	7.50/20xD	8.25/20	Ford	8-3 3/16x3¾	239	6.2	170	95-3600	3-2.5x4.7	Y	Ford-0	8	Eat 1350	SFd	H	6.88-9.56	Ford	F6IHV	501	836	a	TX	77¼	7½x3x 15/32	C

x Front 7.00/20. † Rear 11.25/24. †† Rear 12.00/24. ‡ Rear 12.75/24. ‡‡ Rear 13.50/24. * Price includes chassis and cab. (For abbreviations see page 195)

Leading Truck Fleets of 1000 or more Trucks

(Survey as of June 1, 1939 by Automobile Manufacturers Association)

	No. of Trucks	Tractors	Trailers	Cars
Bell Telephone Co's	16,210	...	...	4,490
Standard Oil Co., N. J.	12,000			4,000
Railway Express Agency	9,960	233	611	274
Borden Co.	7,100	400	...	870
National Dairy Products	7,155	197	596	995
Standard Oil Co., Ind.	6,633	23	52	1,883
Socony Vacuum Oil Co.	4,245	...	...	2,589
Continental Baking Co.	3,911	47	50	178
General Baking Co.	3,195	40	40	90
Swift & Co.	2,960	115	220	3,285
Shell Oil Co's	2,749	80	64	2,779
Ward Baking Co;	2,501	4	6	36
Armour & Co.	2,242	130	153	3,474
Standard Brands, Inc.	2,347	...	...	444
Hertz Drivurself Stations	2,264	...	...	566
Standard Glass & Electric Co.	2,104	...	...	700
Middle West Service Co.	1,997	...	361	1,087
Standard Oil Co., Calif.	1,826	4	4	1,156
National Biscuit Co.	1,605	6	6	2
Pacific Gas & Electric Co.	1,595	2	3	1,034
Jewel Tea Co.	1,552			93
Dugan Bros.	1,500	50	50	60
Quality Bakers of America	1,500	5	10	200
The Texas Co.	1,502	...	3	1,642
Cities Service & Affiliated Co's.	1,386	101	59	654
Gulf Oil Corp.	1,138	61	22	1,393
Union Oil Co. of Calif.	1,084	28	107	912
Kraft-Phenix Cheese Corp.	1,102	7	7	300
Shell Oil Company	1,040	60	64	1,003
Metropolitan Distributors, Inc.	1,086	...	...	12
General Ice Cream Corp.	1,016	2	3	184

American Two-Cycle Outboard Motors

Make and Model	Power Head	No. of Cylinders	Bore and Stroke (In.)	Piston Displacement (Cu. In.)	N.O.A. Certified Brake Hp.	R.P.M.	Weight (Lb.)	Piston Rings No. and Size	Propeller Diameter and Pitch (In.)	Starting Device	Fuel Tank Capacity (Gal.)	Gear Ratio	Ignition System Type	Carburetor Make and Size	Spark Plug Make and Model	Type of Exhaust	Cooling System
Bendix (1) .... SMD	RV-2 Port	1	2 1/16x1½	5.00	2.25	3300	27.0	3-3/32	7½x5	Cord	0.57	12-19	Magneto	Str-½	Ch-J10	Underwater	Air
Bendix .... TMD	RV-2 Port	2	2 1/16x1½	10.00	4.50	4000	41.0	3-3/32	8¼x6	Cord	0.95	12-19	Magneto	Str-¾	Ch-J10	Underwater	Air
Elto (2) .... Cub	Ch.V-2 Port	1	1⅛x1	1.00	.50	4000	8.5	2-3/32	5½x4¾	Cord	0.12	12-25	Magneto	Own....	Ch-H10	Underwater	Pump
Elto .... Pal	Ch.V-2 Port	1	1⅜x1⅜	2.00	1.10	3750	14.0	2-3/32	6x5	Cord	0.20	13-20	Magneto	Own....	Ch-H10	Underwater	Pump
Elto .... Ace	Ch.V-2 Port	1	1¾x1 35/64	3.75	1.80	3500	21.0	2-3/32	7x6	Cord	0.43	13-20	Magneto	Own....	Ch-C7	Underwater	Pump
Elto .... Handitwin	Ch.V-2 Port	2	1¾x1⅜	6.60	3.00	3500	31.5	2-3/32	7½x6	Cord	0.43	13-20	Magneto	Own....	Ch-C7	Underwater	Pump
Elto .... Lightwin	Ch.V-2 Port	2	2x1⅝	10.00	5.00	3500	40.0	2-⅛	7½x8	Cord	0.50	13-20	Magneto	Own....	Ch-M6	Underwater	Pump
Elto ..... Weedless Lightwin	Ch.V-2 Port	2	2x1⅝	10.00	5.00	3500	48.0	2-⅛	7½x8	Cord	0.50	13-20	Magneto	Own....	Ch-M6	Underwater	Pump
Elto .... Fleetwin	RV-2 Port	2	2¼x1⅞	15.00	8.50	4000	66.0	2-⅛	9x8¼	Cord	1.12	13-19	Magneto	Own....	Ch-M6	Underwater	Pump
Evinrude .... Mate	Ch.V-2 Port	1	1⅛x1	1.00	.50	4000	10.0	2-3/32	5½x4¾	Cord	0.12	12-25	Magneto	Own....	Ch-H10	Underwater	Pump
Evinrude .... Ranger	Ch.V-2 Port	1	1⅜x1⅜	2.00	1.10	3750	16.0	2-3/32	6x5	Cord*	0.50	13-20	Magneto	Own....	Ch-H10	Underwater	Pump
Evinrude .... Sportsman	Ch.V-2 Port	1	1¾x1 35/64	3.75	2.00	3500	23.5	2-3/32	7x6	Cord*	0.50	13.20	Magneto	Own....	Ch-H10	Underwater	Pump
Evinrude .... Sportwin	Ch.V-2 Port	2	1¾x1⅜	6.60	3.30	3500	33.5	2-3/32	7½x6	Cord*	0.75	13-20	Magneto	Own....	Ch-H10	Underwater	Pump
Evinrude ..... Midget Racer	RV-2 Port	2	1¾x1 35/64	7.50	6.00	5000	37.5	3-3/32	6¾x8½	Cord	1.25	13-20	Magneto	Own....	Ch-R1	Muffler	Pump
Evinrude .... Speeditwin	EV-2 Port	2	2¾x2½	30.00	22.50	4000	110.0	2-⅛	10½x10½	Cord	2.50	15-21	Magneto	Own....	Ch-M5	Underwater	Pump
Evinrude .. Racing Speeditwin	RV-2 Port	2	2¾x2 33/64	30.00	......	......	97.0	2-⅛	9½x14	Cord	2.50	13-19	Battery	Vac.....	Ch-R11S	Open Stacks	Pump
Evinrude .... Zephyr	RV-2 Port	4	1½x1⅜	9.70	5.40	4000	43.0	2-3/32	7½x7½	Cord*	0.75	13-20	Magneto	Own....	Ch-J10	Underwater	Pump
Evinrude .... Lightfour	RV-2 Port	4	1¾x1 35/64	15.00	9.70	4000	63.0	3-3/32	8¾x9	Cord*	1.25	11-17	Magneto	Own....	Ch-M5	Underwater	Pump
Evinrude .... Sportfour	RV-2 Port	4	2x2	25.00	17.60	4000	98.0	3-⅛	9¾x9¾	Cord*	2.75	13-19	Magneto	Own....	Ch-M5	Underwater	Pump
Evinrude .... Speedifour	RV-2 Port	4	2½x2½	50.00	33.40	4000	140.0	2-⅛	10½x13	Cord†	4.00	15-21	Magneto	Own....	Ch-M5	Underwater	Pump
Evinrude Racing-460	RV-2 Port	4	2¾x2½	60.00	......	......	140.0	2-⅛	10½x18	Cord	4.00	13-19	Battery	Vac.....	Ch-R11S	Open Stacks	Pump
Johnson MS-15	NV-3 Port	1	1½x1⅜	2.42	1.50	4000	19.0	2-3/32	6½x4¼	Cord	0.23	13-20	Magneto	Own-½	Ch-J8	Underwater	Pump
Johnson MD-15	NV-3 Port	1	1½x1⅜	2.42	1.50	4000	24.0	2-3/32	6½x4¼	RP	0.29	13-20	Magneto	Joh-½	Ch-J8	Underwater	Pump
Johnson HS-15	CRV-3 Port	2	1⅜x1⅜	4.08	2.50	4000	21.5	2-3/32	6⅝x5¼	Cord	0.41	13-20	Magneto	Joh-½	Ch-J8	Underwater	Pump
Johnson HA-15	CRV-3 Port	2	1⅜x1⅜	4.08	2.50	4000	26.0	2-3/32	6⅝x5¼	RP	0.41	13-20	Magneto	Joh-½	Ch-J8	Underwater	Pump
Johnson HD-15	CRV-3 Port	2	1⅜x1⅜	4.08	2.50	4000	28.0	2-3/32	6⅝x5¼	RP	0.47	13-20	Magneto	Joh-½	Ch-J8	Underwater	Pump
Johnson LT-10	CRV-3 Port	2	1 15/16x1½	8.84	5.00	4000	33.5	3-3/32	8x7½	Cord	0.66	14-25	Magneto	Joh-13/16	Ch-J8	Underwater	Pump
Johnson AT-10	CRV-3 Port	2	1 15/16x1½	8.84	5.00	4000	38.0	3-3/32	8x7½	RP	0.66	14-25	Magneto	Joh-13/16	Ch-J8	Underwater	Pump
Johnson DT-10	CRV-3 Port	2	1 15/16x1½	8.84	5.00	4000	42.5	3-3/32	8x7½	RP	0.81	14-25	Magneto	Joh-13/16	Ch-J8	Underwater	Pump
Johnson KA-10	RV-2 Port	2	2⅛x1 31/32	13.96	9.80	4000	64.0	3-⅛	9½x9	Cord	1.62	14-24	Magneto	Joh-21/32	Ch-R7	Underwater	Pre.Vac
Johnson SD-10	RV-2 Port	2	2½x2¼	22.10	16.00	4000	88.0	3-3/32	10x10	RP	2.50	14-24	Magneto	Joh-⅞	Ch-5M	Underwater	Pre.Vac
Johnson PO-15	RV-2 Port	2	2¾x2.52	29.92	22.00	4000	109.0	3-⅛	12x12	Cord	2.50	12-21	Magneto	Vac-1⅝	Ch-R7	Underwater	Pre.Vac
Mercury(4) "3" DeL. Single	-2 Port	1	2x1¾	5.50	3.00	4250	30.0	2-⅛	7⅝x6	Cord	0.63	......	Magneto	Til	Ch-J4	Underwater	Pump
Mercury "6" Alternate Twin	-2 Port	2	2x1¾	11.00	6.00	4250	38.0	2-⅛	7⅝x6	Cord	1.00	......	Magneto	Til	Ch-J4	Underwater	Pump
Neptune (3) 101	NV-2 Port	1	1½x1½	2.65	1.20	3000	17.0	2-⅛	6x5	Cord	0.25	13-20	Magneto	Til-5/16	Ch-J8	Underwater	Pump
Neptune 102	NV-3 Port	1	2 1/16x1½	5.01	2.00	2800	30.0	3-⅛	7½x5⅛	Cord	0.50	14-21	Magneto	Til-9/16	Ch-6M	Underwater	Pump
Neptune 104	NV-3 Port	2	2 1/16x1½	10.02	4.00	3000	45.0	3-⅛	8x7	Cord	1.00	14-21	Magneto	Til-23/32	Ch-J10	Underwater	Pump
Neptune 106	NV-3 Port	2	2 1/16x1½	10.02	6.00	4000	50.0	3-⅛	8x7	Cord	1.00	14-21	Magneto	Til-19/32	Ch-J10	Underwater	Pump
Neptune 1010	NV-3 Port	2	2¼x2	15.90	9.50	4000	63.0	3-⅛	9x9	Cord	1.00	12-21	Magneto	Til-19/32	Ch-J10	Underwater	Pump
Neptune 1016	NV-3 Port	2	2½x2	19.63	16.00	4000	95.0	3-⅛	10x10	Cord	2.00	12-21	Magneto	Til-1⅜	Ch-6M	Underwater	Pump

ABBREVIATIONS

*—Simplex starter optional at additional cost
†—Electric starter optional at additional cost
(1)—Bendix Aviation Corp., Marine Div.
(2)—Evinrude Motors
(3)—Muncie Gear Works, Inc.
(4)—Kiekhaefer Corp.
Ch—Champion Spark Plug
Ch.V—Check Valve
CRV—Combination Rotary and Valveless
Joh—Johnson Carburetor
NV—Valveless
Pre.Vac—Pressure Vacuum
RP—Ready Pull
RV—Rotary Valve
Str—Stromberg Carburetor
Til—Tillotson Carburetor
Vac—Vacturi Carburetor

Manufacture and Sale of Tractors, Combines and Grain Threshers, 1939 and 1938

Kind	Year	Manufactured: Number	Manufactured: Value	Sold by Manufacturers, Total: Number	Sold by Manufacturers, Total: Value	For Domestic Use: Number	For Domestic Use: Value	For Export: Number	For Export: Value
Tractors, all types, total	1939	215,283	$157,744,207	213,209	$157,440,563	176,614	$121,463,990	36,595	$35,976,573
	1938	199,223	151,998,349	204,907	159,614,175	163,924	119,347,188	40,983	40,266,987
Wheel type, all kinds, total	1939	185,544	111,123,992	182,820	110,566,348	154,965	91,142,679	27,855	19,423,669
	1938	172,437	116,881,739	175,473	118,060,604	143,703	94,038,011	31,770	24,022,593
Except "all purpose," total	1939	26,976	20,422,572	30,593	23,629,800	10,803	8,379,845	19,790	15,249,955
	1938	41,377	33,591,356	40,857	33,143,342	14,751	12,245,464	26,106	29,897,878
Belt horsepower: Under 25, total	1939	11,251	6,688,133	10,754	6,413,531	3,425	1,862,034	7,329	4,551,497
	1938	10,591	6,979,224	10,342	6,608,238	4,239	2,832,128	6,103	3,776,110
25-29, total	1939	4,861	3,602,401	6,926	5,161,138	2,646	2,010,017	4,280	3,151,121
	1938	6,950	5,245,515	7,244	5,614,567	2,537	2,069,916	4,707	3,544,651
30 and over, total	1939	10,864	10,132,038	12,913	12,055,131	4,732	4,507,794	8,181	7,547,337
	1938	23,836	21,366,627	23,271	20,920,537	7,975	7,343,420	15,296	13,577,117
"All purpose," total	1939	158,568	90,701,420	152,227	86,936,548	144,162	82,762,834	8,065	4,173,714
	1938	131,060	83,290,373	134,616	84,917,262	128,952	81,792,547	5,664	3,124,715
Belt horsepower: Under 30, total	1939	149,178	83,272,484	143,774	80,129,372	136,255	76,410,334	7,519	3,719,038
	1938	120,991	73,831,989	123,361	74,645,423	118,257	71,975,275	5,104	2,670,148
30 and over, total	1939	9,390	7,428,936	8,453	6,807,176	7,907	6,352,500	546	454,676
	1938	10,069	9,458,384	11,255	10,271,839	10,695	9,817,272	560	454,567
Tracklaying type, all sizes, total	1939	20,127	45,431,189	20,890	45,684,295	12,797	29,228,999	8,093	16,455,296
	1938	16,837	33,771,693	19,801	40,221,557	11,251	24,082,926	8,550	16,138,631
Belt horsepower: Under 50	1939	13,284	19,361,967	14,158	20,339,893	8,175	11,620,524	5,983	8,719,369
	1938	12,593	17,581,554	14,636	20,506,479	7,865	10,962,353	6,771	9,544,126
50 and over	1939	6,843	26,069,222	6,732	25,344,402	4,622	17,608,475	2,110	7,735,927
	1938	4,244	16,190,139	5,165	19,715,078	3,386	13,120,573	1,779	6,594,505
Garden tractors	1939	9,612	1,189,026	9,499	1,189,920	8,852	1,092,312	647	97,608
	1938	9,949	1,344,917	9,633	1,332,014	8,970	1,226,251	663	105,763
Combines (harvester-threshers), total	1939	41,537	25,429,770	35,461	21,515,110	30,976	17,379,209	4,485	4,135,901
	1938	48,046	35,627,594	45,238	33,433,398	41,560	29,708,214	3,678	3,725,184
Grain threshers, including rice and alfalfa thres., total	1939	2,784	2,523,912	3,417	3,129,076	3,623	3,403,905	794	725,171
	1938	8,649	7,438,006	7,096	8,217,904	6,265	5,517,901	831	700,003

American

Line Number	Bus Make and Model	GENERAL: Passenger Rating	Type (City Service, Parlor, etc.)	Standard Wheelbase (In.)	Overall Length (In.)	Tread Front and Rear (In.)	Complete Vehicle Weight (Lb.)	Standard Tire Size (In.): Front	Standard Tire Size (In.): Rear	Maximum Permissible Load on Tires (Lb.): Front	Maximum Permissible Load on Tires (Lb.): Rear	ENGINE: Make and Model	Location	Number of Cylinders Bore and Stroke (In.)	Displacement (Cu. In.)	Rated Horsepower (A.M.A.)	Maximum Brake Hp. at Specified R.P.M.	Maximum Net Torque (Lb. Ft.) at R.P.M.	Valve Arrangement	Oiling System: Oil Pressure to–	Fuel System: Carburetor Make and Type	Carburetor Size (In.)	Gasoline Tank Capacity (Gal.)
1	A. C. F.......25-P	25	Par	195	316⅜	82 –72	12050	9.00/18	9.00/18D	6000	12000	HS......95	UFA	6-4x5	377	38.4	106-2600	268-1000	I	acde(1)	Zen. Up	1½	60
2	A. C. F.......26-S	28	CS	156½	289⅞	82 –72	10420	9.00/18	7.50/20D	6000	8800	HS......95	UFA	6-4x5	377	38.4	106-2600	268-1000	I	acde(1)	Zen. Up	1½	60
3	A. C. F.......H-15-P	28	Par	188	328¾	81¼–70¼	15600	9.75/20	9.75/20D	7000	14000	HS......135	UFA	6-4½x5	477	48.6	140-2800	324-1000	I	acde(1)	Zen. Up	1¾	85
4	A. C. F.......26-U	26-28	CS	195	295⅜	82 –72	10750	9.00/18	9.00/18D	6000	12000	HS......95	UFA	6-4x5	377	38.4	106-2600	268-1000	I	acde(1)	Zen. Up	1½	60
5	A. C. F.......31-S	31	CS	172½	328⅝	81½–69¾	12500	9.00/18	9.00/18D	6000	12000	HS......130	UFA	6-4¼x5	425	43.3	124-2800	290-1000	I	acde(1)	Zen. Up	1¾	72
6	A. C. F.......H-15-S	32	CS	188	324	81¼–70¼	13100	9.00/20	9.00/20D	6500	13000	HS......135	UFA	6-4½x5	477	48.6	140-2800	324-1000	I	acde(1)	Zen. Up	1¾	72
7	A. C. F.......36-S	36	CS	188	366	81¼–70¼	13700	9.75/20	9.75/20D	7800	15600	HS......135	UFA	6-4½x5	477	48.6	140-2800	324-1000	I	acde(1)	Zen. Up	1¾	72
8	A. C. F.......H-9-P	36	Par	245½	395⅜	80⅜–72	18200	10.50/22	10.50/22D	10000	20000	HS......180	UFA	6-5x6	707	60.0	183-2200	496-1000	I	acde(1)	Zen. Up	2	135
9	A. C. F.......37-P	37	Par	254½	396	80⅛–72	18670	10.50/22	10.50/22D	10000	20000	HS......180	UFA	6-5x6	707	60.0	183-2200	496-1000	I	acde(1)	Zen. Up	2	125
10	A C. F.......H-9-S	42	CS	245½	395⅜	80⅜–72	16640	9.75/22	9.75/22D	8400	16800	HS......180	UFA	6-5x6	707	60.0	183-2200	496-1000	I	acde(1)	Zen. Up	2	115
11	A. C. F.......H-16-S	42	CS	210⅜	394½	81¾–72	16800	10.50/20	9.75/20D	9400	15600	HS......180	UFA	6-5x6	707	60.0	183-2200	496-1000	I	acde(1)	Zen. Up	2	90
12	Aerocoach.......EFI	22-25	Par	201⅜	336	75 –65	......	7.00/20	7.00/20D	3900	7800	Ford.....99B	R	8-3$\frac{3}{16}$x3¾	239	32.5	95-3600	170-2100	L	acdg	CG. Do	....	50
13	Aerocoach.......EFT	27-29	CS	201⅜	336	75 –65	......	7.00/20	7.00/20D	3900	7800	Ford.....99B	R	8-3$\frac{3}{16}$x3¾	239	32.5	95-3600	170-2100	L	acdg	CG. Do	....	50
14	Flxible.....21-CR-70	21	Par	182	351½	76 –70½	10200	7.50/20	7.50/20D	......	......	Che.....1940	R	6-3½x3¾	216	29.4	78-3200	170-(2)	I	acdf	Car. Do	1¼	40
15	Flxible.....25-CR-70	25	Par	182	351½	76 –70½	10400	7.50/20	7.50/20D	......	......	Che.....1940	R	6-3½x3¾	216	29.4	78-3200	170-(2)	I	acdf	Car. Do	1¼	40
16	Flxible....25-BR-140	25	Par	182	358	76 –70½	11700	8.25/20	8.25/20D	......	......	Bui.......60	R	8-3$\frac{7}{16}$x4$\frac{5}{16}$	320	37.8	141-3600	269-2000	I	abcdf	Str. Do	1	40
17	Flxible....29-BR-140	29	Par	218	395½	76 –70½	12275	8.25/20	8.25/20D	......	......	Bui.......60	R	8-3$\frac{7}{16}$x4$\frac{5}{16}$	320	37.8	141-3600	269-2000	I	abcdf	Str. Do	1	40
18	Ford..........O9-B	27	CS	148½	309	82½–83	9508	9.00/18	7.50/20D	6000	8800	Ford.....Bus	R	8-3$\frac{3}{16}$x3¾	239	32.5	95-3600	170-1700	L	acd	Own Do	....	60
19	Mack..........L25	25	CS	165	300½	82¼–75¼	......	7.00/20	7.00/20D	......	......	Mack.....FK	R	6-3¾x4⅜	290	33.8	94-3000	200-1200	L	acdfg	Str. Up	1½	40
20	Mack..........CW	23-25	CS	165	301	81½–74½	......	7.50/20	7.50/20D	......	......	Mack.....CU	R	6-3⅞x5	354	36.0	107-2800	245-1000	L	acdeg	Str. Up	1¾	55
21	Mack..........CY	25-27	CS	182	318	81½–74½	......	7.50/20	7.50/20D	......	......	Mack.....CU	R	6-3⅞x5	354	36.0	107-2800	245-1000	L	acdeg	Str. Up	1¾	55
22	Mack..........31SB	31	SB	161	.....	68 –65	......	7.00/20	7.00/20D	......	......	Mack.....FO	FH	6-3½x4⅜	253	29.4	75-2800	166-1200	L	acdefg	Str. Up	1¼	30
23	Mack..........CQ	30-31	CS	178	353⅜	82 –73	......	9.00/22	9.00/22D	......	......	Mack.....CT	R	6-4½x5½	525	48.6	129-2300	380-800	L	acdeg	Str. Up	1¾	80
24	Mack..........37SB	37	SB	195	.....	66½–65	......	7.50/20	7.50/20D	......	......	Mack.....FM	FH	6-3⅝x4⅜	271	31.6	78-2800	188-1200	L	acdefg	Str. Up	1¼	30
25	Mack..........CO	36-37	CS	212	382	82 –72⅜	......	9.75/20	9.75/20D	......	......	Mack.....EO	R	6-4⅜x5¾	519	45.7	141-2100	380-1000	I	acdefg	Str. Up	1¾	80
26	Mack..........CT	35-37	CS	214	389⅜	82 –73	......	9.00/22	9.00/22D	......	......	Mack.....CT	R	6-4½x5½	525	48.6	129-2300	380-800	L	acdeg	Str. Up	1¾	80
27	Mack..........CM	40-41	CS	232	396	82 –72⅜	......	9.75/20	9.75/20D	......	......	Mack.....EP	R	6-4¾x5¾	611	54.1	158-2000	464-1000	I	acdefg	Str. Up	2	80
28	Mack..........43SBN	43	SB	212	.....	68½–69¾	......	8.25/20	8.25/20D	......	......	Mack.....FK	FH	6-3¾x4⅜	290	33.7	85-2800	192-1000	L	acdefg	Str. Up	1½	40
29	Mack..........43SB	43	SB	212	.....	77 –69¾	......	8.25/20	8.25/20D	......	......	Mack.....FK	FH	6-3¾x4⅜	290	33.7	94-3000	200-1200	L	acdefg	Str. Up	1½	40
30	Mack..........43SBX	43	SB	212	.....	77 –69¾	......	8.25/20	8.25/20D	......	......	Mack.....BG	FH	6-3⅝x5	310	31.6	90-3000	210-1000	L	acdeg	Str. Up	1½	40
31	Mack..........49SB	49	SB	231	.....	78⅞–69¾	......	8.25/20	8.25/20D	......	......	Mack.....CU	FH	6-3⅞x5	354	36.0	107-2800	245-1000	L	acdeg	Str. Up	1¾	40
22	Mack..........55SB	55	SB	250	.....	77½–69¾	......	9.00/20	9.00/20D	......	......	Mack.....CU	FH	6-3⅞x5	354	36.0	107-2800	245-1000	L	acdeg	Str. Up	1¾	40
33	Mack..........61SB	61	SB	268	.....	77½–69¾	......	9.00/20	9.00/20D	......	......	Mack.....CU	FH	6-3⅞x5	354	36.0	107-2800	245-1000	L	acdeg	Str. Up	1¾	40
34	Reo..........384-P	25-29	Par	150	291	81⅝–72¼	10500	8.25/18	8.25/18D	4900	9800	Reo. GC-310	R	6-3⅝x5	310	31.5	97-2800	226-1000	L	abcd	Zen. Do	1½	75
35	Reo...394-T, 394-TD	27-29	CS	150	302	81⅝–72¼	9330	7.50/18	7.50/20D	4050	8100	Reo. GC-310	R	6-3⅝x5	310	31.5	97-2800	226-1000	L	abcd	Zen. Do	1½	43
36	Reo..........385-P	29-33	Par	186	322	81⅝–72¼	11550	8.25/18	8.25/18D	4900	9800	Reo......361	R	6-4⅛x4½	361	40.8	105-2700	255-1000	L	abcd	Zen. Do	1½	75
37	Reo...395-T, 395-TD	31-33	CS	186	338	81⅝–72¼	10980	8.25/18	8.25/18D	4900	9800	Reo......361	R	6-4⅛x4½	361	40.8	105-2700	255-1000	L	abcd	Zen. Do	1½	43
38	Twin Coach ■23R-23G	23	CS	178	282⅛	82 –73⅛	9400♦	8.25/18	8.25/18D	4900	9800	Her. JXDTR	R	6-4x4¼	320	38.4	92-2400	243-800	L	abcdg	Zen. Up	1¼	50
39	Twin Coach ■27R-27G	27	CS	210	315⅝	82⅛–73⅛	10300♦	8.25/18	8.25/18D	4900	9800	Her. WXC-3	R	6-4¼x4½	383	43.3	104-2400	275-1000	L	abcdg	Zen. Up	1½	65
40	Twin Coach ■30R-30G	30	CS	235½	342⅛	81¾–74⅝	11000♦	9.00/18	8.25/20D	6000	10600	Her. WXLC-3	R	6-4¼x4¾	404	43.3	111-2400	296-1100	L	abcdg	Zen. Up	1½	65
41	Tw. Coach ■31RL-31G	31	CS	179$\frac{17}{32}$	335	82¾–72¾	12500	8.25/20	8.25/20D	5300	10600	Her. WXLC-3	R	6-4¼x4¾	404	43.3	111-2400	296-1100	L	abcdg	Zen. Up	1½	80
42	Tw. Coach ■35RL-35G	35	CS	207$\frac{17}{32}$	367	82¾–72¾	14500	9.75/20	9.75/20D	7800	15600	Her. RXLCT	R	6-4⅝x5¼	529	51.3	127-2400	380-900	L	abcdg	Zen. Up	1¾	90
43	Tw. Coach ■41RL-41G	41	CS	239$\frac{17}{32}$	395	82¾–72¾	15200	9.75/20	9.75/20D	7800	15600	Her. RXLDT	R	6-4¾x5¼	558	54.1	132-2400	400-900	L	abcdg	Zen. Up	1¾	90
44	White..........706M	25	CS	170	266$\frac{5}{16}$	79$\frac{1}{16}$–64½	10500	7.50/20	7.50/20D	4400	8800	Whi.....318	FI	6-3⅞x4½	318	36.0	94-2600	204-2600	L	abcdg	Zen. Do	1⅜	35
45	White..........1010	25	CS	147	300	75 –69⅝	10000	7.00/20	7.00/20D	3900	7800	Her..........	UFA	6-3⅝x4¼	263	31.5	82-3000	185-1100	L	abcd	Zen. Up	1¼	35
46	White..........1012	25	CS	147	300	75 –65	10500	7.00/20	7.00/20D	3900	7800	Her..........	UFA	6-4x4¼	320	38.4	95-3000	225-1100	L	abcd	Zen. Up	1¼	35
47	White..........782	31	CS	168	336	82$\frac{1}{16}$–71¾	12000	9.00/20	9.00/20D	6500	13000	Whi.....362	UFA	6-3⅞x5⅛	362	36.0	118-3000	295-1200	L	abcdg	Str. Do	1⅜	65
48	White..........784	32	CS	168	336$\frac{1}{16}$	82$\frac{1}{16}$–71¾	14400	9.75/20	9.75/20D	7800	15600	Whi.....681	UFA	12-4⅛x4¼	681	81.7	210-2800	500-1200	L	abcdefg	Zen Ho	1⅜	85
49	White..........786	36	CS	191	372$\frac{1}{16}$	82$\frac{1}{16}$–71¾	15500	9.75/20	9.75/20D	7800	15600	Whi.....681	UFA	12-4⅛x4¼	681	81.7	210-2800	500-1200	L	abcdefg	Zen Ho	1⅜	105
50	White..........788	40	CS	214	395$\frac{1}{16}$	82$\frac{1}{16}$–71¾	16400	9.75/20	9.75/20D	7800	15600	Whi.....681	UFA	12-4⅛x4¼	681	81.7	210-2800	500-1200	L	abcdefg	Zen Ho	1⅜	105
51	Yel. Tr. & Ch. TG-21	21	CS	160	284¼	69⅛–65	6560	7.50/18	7.50/18D	4050	8100	Che.....1940	FH	6-3½x3¾	216	29.4	78-3200	170-(2)	I	acdf	Car. Do	1¼	35
52	Yel. Tr. & Ch.. TG-24	24	CS	146	282½	72 –65	7330	7.00/20	7.00/20D	3900	7800	Che.....1940	R	6-3½x3¾	216	29.4	78-3200	170-(2)	I	acdf	Zen. Do	....	35
53	Yel. Tr. & Ch.. PG-25	25	Par	191	361	78⅜–70½	......	7.00/20	7.50/20D	4400	8800	GMT.....246	R	6-3$\frac{23}{32}$x3$\frac{13}{16}$	246	33.1	89-3000	195-1200	I	abcdf	Zen. Do	1⅜	60
54	Yel. Tr. & Ch..(3)1203	25	CS	171	298⅝	82½–76	12500	9.00/18	9.00/18D	6000	12000	GM*....4-71	R	4-4¼x5	283	22.6	110-2000	353-900	I†	abcdfh	N	....	51°
55	Yel. Tr. & Ch.......739	25	CS	171	298½	82½–76	10118	8.25/18	8.25/18D	4900	9800	GMT.....400	R	6-4⅛x5	400	40.9	112-2500	292-(4)	I	abcdf	Zen. Do	1½	60
56	Yel. Tr. & Ch.. PG-29	29	Par	218	396	80 –73	......	9.00/18	9.00/18D	6000	12000	GMT.....426	R	6-4¼x5	425	43.3	145-2700	340-(4)	I	abcdf	Zen. Do	1½	60
57	Yel. Tr. & Ch.......728	32	CS	184	348	81¾–73½	15244	9.00/20	9.00/20D	6500	13000	GMT.....479	R	6-4⅝x4¾	479	51.4	141-2600	360-1000	I	abcdf	Zen. Do	2	85
58	Yel. Tr. & Ch.......731	36	CS	214	379½	81¾–73½	16236	9.75/20	9.75/20D	7800	15600	GMT.....529	R	6-4⅝x5¼	529	51.4	158-2500	405-1000	I	abcdf	Zen. Do	2	85
59	Yel. Tr. & Ch...(3)736	36	CS	213¾	379½	79¾–71	19500	9.75/22	9.75/22D	8400	16800	GM*....6-71	R	6-4¼x5	425	34.0	165-2000	530-900	I†	abcdfh	N	....	85°
60	Yel. Tr. & Ch.. *PD-37	37	Par	231¾	396	78¾–71¾	19180	10.50/20	10.50/20D	9400	18800	GM*....6-71	R	6-4¼x5	425	34.0	165-2000	525-1000	I†	abcdfh	N	....	95°
61	Yel. Tr. & Ch.. PG-37	37	Par	231¾	396	78¾–71¾	19090	10.50/20	10.50/20D	9400	18800	GMT.....707	R	6-5x6	707	60.0	175-2100	540-1200	I	abcdfh	Str. Do	2	150
62	Yel. Tr. & Ch.......740	40	CS	233½	396	78¼–71¾	17545	10.50/20	10.50/20D	9400	18800	GMT.....707	R	6-5x6	707	60.0	175-2100	560-1000	I	abcdf	Str. Do	2	100
63	Yel. Tr. & Ch. (5) 740	40	CS	233½	396	78¼–71¾	17500	10.50/20	10.50/20D	9400	18800	GM*....6-71	R	6-4¼x5	425	34.0	165-2000	530-900	I†	abcdfh	N	....	75°

ABBREVIATIONS FOR BUSES

*—General Motors 2 cycle Diesel engine
†—Exhaust valves only, Intake ports in cylinder walls
°—Fuel Oil
▾—11 leaves for R. H. side; 13 leaves for L. H. side
■—G models same as R models except Torsion Bars used in place of springs
♦—Weight for R models

‡—11 leaves for R. H. side; 12 leaves for L. H. side
‡—10 leaves for R. H. side; 11 leaves for L. H. side
(1)—Oil pressure also to clutch pilot and air compressor
(2)—850-1550 R.P.M.
(3)—Diesel Electric Drive, 2 cycle motor
(4)—800-1400 R.P.M.
(5)—Two cycle Diesel motor with Hydraulic transmission, speeds variable and direct

a—Main Bearings
A—Air pressure (Brakes)
AL—Electric Auto-Lite Co.
b—Wrist Pins
BB—Borg & Beck Div.
Bd—Budd Wheel Co.
BL—Brown-Lipe (Spicer Mfg. Co.)
Bui—Buick Motor Co.
c—Connecting Rods
Car—Carter Carburetor Co.
Ce—Centrifugal

CG—Chandler-Groves Carburetor
Che—Chevrolet Motor Div.
Cla—Clark Equipment
CS—City Service Coach
d—Camshaft Bearings
D—Dual (Tires)
Dn—Dayton Steel Foundry Co.
Do—Downdraft
DP—Double Plate, Dry
DR—Delco-Remy Div.
Ds—Drive Shaft

Bus Chassis

Electrical System: Ignition System Make	Generator and Starter Make	Battery: Make	Battery: Voltage and Amp. Hours Capacity	Governor: Type	Governor: Maximum Governed Speed (M.P.H.)	Governor: Integral with Engine	Clutch—Make and Type	Transmission: Make	Transmission: No. of Forward Speeds	Transmission: Low Speed Gear Reduction	Transmission: Universal Joints Number and Make	Rear Axle: Make and Model	Rear Axle: Ratio Standard	Rear Axle: Ratio Optional	Brakes: Service Type and Location	Brakes: Service Operation	Brakes: Service Lining Area (Sq. In.)	Brakes: Hand Operates On	Brakes: Hand Lining Area (Sq. In.)	Springs: Front No. of Leaves	Springs: Front Length and Width (In.)	Springs: Rear No. of Leaves	Springs: Rear Length and Width (In.)	Running Gear: Front Axle Make	Running Gear: Steering Gear Make	Running Gear: Outside Diam. of Min. Turning Circle (Ft.)	Running Gear: Wheel—Make	Line Number
DR	DR	Exi	12-158	Ce	62	N	Spi...SP	Spi	4	4.57	2-Spi	Tim.....54427	4.44	.....	I-FW	A	460	Ds	88	8	54-3	13	58½-3	Tim	Ro	65	Bd	1
DR	DR	Exi	12-138	Ce	50	N	Spi...SP	Spi	3	4.01	2-Spi	Tim.....54418	5.43	.....	I-FW	A	460	Ds	88	12	56-3	14	58½-3	Tim	Ro	58	Bd	2
DR	DR	Exi	12-158	Ce	66	N	Spi...SP	Spi	4	4.76	2-Spi	Tim.....58258	4.55	5.12	I-FW	A	623	Ds	88	14	56-3½	15	60-4	Tim	Ro	60	Bd	3
DR	DR	Exi	12-138	Ce	51	N	Spi...SP	Spi	3	4.01	2-Spi	Tim.....54418	5.43	.....	I-FW	A	460	Ds	95	12	54-3	16	58½-3	Tim	Ro	65	Bd	4
DR	DR	Exi	12-158	Ce	58	N	Spi...SP	Spi	3	3.80	2-Spi	Tim.....56515	5.29	4.44	I-FW	A	575	Ds	88	12	56-3	16	60-3½	Tim	Ro	62	Bd	5
DR	DR	Exi	12-158	Ce	55	N	Spi...SP	Spi	3	4.04	2-Spi	Tim.....58258	5.12	4.55	I-FW	A	623	Ds	88	14	56-3½	15	60-4	Tim	Ro	60	Bd	6
DR	DR	Exi	12-158	Ce	61	N	Spi...SP	Spi	3	3.80	2-Spi	Tim.....58282	5.57	5.12	I-FW	A	692	Ds	88	12	59-3½	13	60-4	Tim	Ro	68	Dn	7
DR	DR	Exi	12-158	Ce	60	N	Lg...SP	Spi	4	4.36	2-Spi	Tim.....59023	4.55	3.53	I-FW	A	795	Ds	121	14	54-3½	13	64-5	Tim	Ro	82	Bd	8
DR	DR	Exi	12-158	Ce	61	N	Lg...SP	Spi	4	4.36	2-Spi	Tim.....59023	4.55	3.53	I-FW	A	867	Ds	121	*	58-4	12	67-5	Tim	Ro	79	Bd	9
DR	DR	Exi	12-158	Ce	52	N	Lg...SP	Spi	4	4.36	2-Spi	Tim.....59023	5.12	4.55	I-FW	A	795	Ds	121	14	54-3½	12	64-5	Tim	Ro	82	Bd	10
DR	DR	Exi	12-158	Ce	51	N	Lg...DP	Spi	3	3.80	2-Spi	Tim.....59023	5.12	.....	I-FW	A	824	Ds	121	13	61-4	11	64-5	Tim	Ro	72	Dn	11
Fo	LN	Exi	12-150	Su	....	N	Fo...SP	BL	4	4.92	2-Spi	Tim.....53300	5.14	.....	I-FW	A	381	Ds	77	9	48-3	10	62-3	Tim	Ro	74	MW	12
Fo	LN	Exi	12-150	Su	....	N	Fo...SP	BL	4	4.92	2-Spi	Tim.....53300	6.60	.....	I-FW	A	381	Ds	77	9	48-3	10	62-3	Tim	Ro	74	MW	13
DR	DR	DR	12-105	Su	55	N	Che..SP	Cla	4	6.35	2-Spi	Tim..........	5.66	5.14	I-FW	A	....	Ds	....	....	52-	....	54-	Tim	Ro	....	Bd	14
DR	DR	DR	12-105	Su	55	N	Che..SP	Cla	4	6.35	2-Spi	Tim..53542-TW	5.66	5.14	I-FW	A	....	Ds	....	....	52-	....	54-	Tim	Ro	....	Bd	15
DR	DR	DR	12-140	Ce	60	N	Spi...SP	BL	4	4.57	2-Spi	Tim56411-TWX	4.44	5.28	I-FW	A	....	Ds	....	....	52-	....	54-	Tim	Ro	....	Bd	16
DR	DR	DR	12-140	Ce	60	N	Spi...SP	BL	4	4.57	2-Spi	Tim56411-TWX	5.28	4.44	I-FW	A	....	Ds	....	....	52-	....	54-	Tim	Ro	....	Bd	17
Fo	Fo	E-W	12-158	Su	50	Y	Fo...SP	Fo	3	3.81	2-Fo	Ford.....O9-B	5.83	6.66	I-FW	A	472	Ds	55	11	54-3	14	58-3	Own	Fo	56	Own	18
DR	DR	Exi	12-118	Su	40	N	BB...SP	Own	3	4.16	2-Spi	Own....RA-41	5.83	5.14	I-FW	H	371	Ds	87	11	60-3	11	60-3	Own	Own	....	Own	19
DR	DR	Exi	12-158	Ce	44	Y	WL..SP	Own	3	4.16	2-Spi	Own.......CW	4.45	4.08	I-FW	A	456	Ds	87	11	60-3	11	60-3	Own	Own	53¼	....	20
DR	DR	Exi	12-158	Ce	44	Y	WL..SP	Own	3	4.16	2-Spi	Own.......CW	4.45	4.08	I-FW	A	456	Ds	87	11	60-3	11	60-3	Own	Own	....	Own	21
DR	DR	Exi	6-135	Su	50	N	BB...SP	BL	4	6.34	3-Spi	Tim.....RA-31	5.83	4.85	I-FW	H	296	Ds	83	9	50-3	13	60-3	Tim	Ro	55	Own	22
DR	DR	Exi	12-158	Ce	45	Y	WL..SP	Own	3	3.79	2-Spi	Own.......CT	5.86	5.43	I-FW	A	635	Ds	86	....	60-3½	....	60-4	Own	Own	63⅔	....	23
DR	DR	Exi	6-135	Su	50	N	BB...SP	BL	4	6.34	3-Spi	Tim.....RA-31	5.83	4.85	I-FW	H	329	Ds	83	9	50-3	13	60-3	Tim	Ro	66⅓	Own	24
DR	DR	Exi	12-198	Ce	48	Y	WL..SP	Own	3	4.74	2-Spi	Own....RA-42	3.70	3.08	I-FW	A	816	Ds	86	10	60-4	16	60-4	Own	Own	64	Own	25
DR	DR	Exi	12-158	Ce	45	Y	WL..SP	Own	3	3.79	2-Spi	Own.......CT	5.86	5.43	I-FW	A	635	Ds	86	....	60-3½	....	60-4	Own	Own	76½	Own	26
DR	DR	Exi	12-198	Ce	48	Y	WL..SP	Own	3	4.74	2-Spi	Own....RA-42	3.70	4.62	I-FW	A	816	Ds	86	11	60-4	17	60-4	Own	Own	71½	Own	27
DR	DR	Exi	6-118	Su	44	N	BB...SP	BL	4	6.34	4-Spi	Tim.....RA-26	6.83	6.16	I-FW	H	370	Ds	83	10	50-3	11	60-3	Tim	Own	68	Own	28
DR	DR	Exi	6-118	Su	44	N	BB...SP	BL	4	6.34	4-Spi	Tim.....RA-26	6.83	6.16	I-FW	H	370	Ds	83	10	50-3	11	60-3½	Tim	Own	68	Own	29
DR	DR	Exi	6-118	Su	41	N	BB...SP	Fu	5	7.53	4-Spi	Tim.....RA-26	6.83	6.16	I-FW	H	370	Ds	87	10	50-3	11	60-3½	Tim	Own	68	Own	30
DR	DR	Exi	6-118	Ce	36	Y	WL..SP	Fu	5	7.53	4-Spi	Tim.....RA-26	6.83	6.16	I-FW	H	370	Ds	87	10	50-3	14	60-3½	Tim	Own	72	Own	31
DR	DR	Exi	6-118	Ce	38	Y	WL..SP	Fu	5	7.53	4-Spi	Tim.....RA-26	6.83	6.16	I-FW	H	370	Ds	87	12	50-3	14	60-3½	Tim	Own	74⅓	Own	32
DR	DR	Exi	6-118	Ce	38	Y	WL..SP	BL	4	6.12	4-Spi	Tim.....RA-26	6.83	6.16	I-FW	H	370	Ds	83	12	50-3	16	60-3½	Tim	Own	76¼	Own	33
DR	DR	Wil	12-153	Su	....	N	Lg...SP	Own	3	3.38	2-Mec	Tim..........	4.57	5.14	I-FW	A	470	Ds	88	9	58-3½	11	58-3½	Tim	Ro	57	MW	34
DR	DR	Wil	12-153	Su	....	N	Lg...SP	Own	3	3.38	2-Mec	Tim..........	5.66	5.14	I-FW	A	470	Ds	88	9	58-3½	11	58-3½	Tim	Ro	54½	MW	35
DR	DR	Wil	12-153	Su	....	N	Lg...SP	Own	3	3.38	2-Mec	Tim..........	4.57	5.14	I-FW	A	470	Ds	88	9	58-3½	11	58-3½	Tim	Ro	63	MW	36
DR	DR	Wil	12-153	Su	....	N	Lg...SP	Own	3	3.38	2-Mec	Tim..........	5.66	5.14	I-FW	A	470	Ds	88	9	58-3½	11	58-3½	Tim	Ro	64	MW	37
DR	DR	Exi	12-117	Su	39	N	Spi...SP	Spi	3	4.11	2-Spi	Tim.....53537	5.14	4.57	I-FW	A	384	Ds	31	11	46-3	14	60-3	Tim	Ro	57½	Bd	38
DR	DR	Exi	12-117	Su	38	N	Spi...SP	Spi	3	4.11	2-Spi	Tim.....54419	5.28	4.86	I-FW	A	472	Ds	31	13	46-3	14	60-3	Tim	Ro	66⅓	Bd	39
DR	DR	Exi	12-134	Su	41	N	Spi...SP	Spi	3	4.11	2-Spi	Tim.....56219	5.28	4.44	I-FW	A	576	Ds	31	13	46-3	15	60-3	Tim	Ro	....	Bd	40
DR	DR	Exi	12-134	Su	41	N	Spi...SP	Spi	3	4.11	2-Spi	Tim.....56218	5.70	4.44	I-FW	A	576	Ds	31	10	60-4	12	60-4	Tim	Ro	57⅙	Bd	41
DR	DR	Exi	12-134	Su	43	N	Spi...SP	Spi	3	3.97	2-Spi	Tim.....58266	5.57	4.55	I-FW	A	720	Ds	61	13	60-4	14	66-4	Tim	Ro	65½	Bd	42
DR	DR	Exi	12-134	Su	43	N	Spi...SP	Spi	3	3.97	2-Spi	Tim.....58266	5.57	5.12	I-FW	A	720	Ds	61	13	60-4	16	66-4	Tim	Ro	74½	Bd	43
DR	LN	E-W	12-118	Su	49	N	Whi..SP	Own	3	4.03	3-Spi	Own.......27C	5.10	4.45	I-FW	A	368	Ds	88	15	41-2½	16	54-2½	Own	Ro	56	Bd	44
AL	AL	E-W	12-120	Su	44	N	Whi..SP	Own	3	3.31	2-Spi	Own.......60C	6.80	5.83	I-FW	H	304	Ds	45	12	50-2½	14	62-3	Own	Ro	52	Bd	45
AL	AL	E-W	12-120	Su	48	N	Whi..SP	Own	4	5.00	2-Spi	Own.......37C	6.28	5.10	I-FW	H	346	Ds	45	12	50-2½	14	62-3	Own	Ro	52	Bd	46
DR	DR	E-W	12-158	Su	58	N	Whi..SP	Own	3	4.07	2-Spi	Own......106C	5.71	6.43	I-FW	A	691	Ds	48	12	54-3½	11	60-4	Own	Ro	52⅔	Own	47
DR	DR	E-W	12-158	Ce	66	Y	Whi..SP	Own	3	4.07	2-Spi	Own.....34CE	5.22	4.88	I-FW	A	818	Ds	123	12	54-3½	11	60-4	Own	Ro	51	Own	48
DR	DR	E-W	12-158	Ce	66	Y	Whi..SP	Own	3	4.07	2-Spi	Own.....34CE	5.22	4.88	I-FW	A	818	Ds	123	13	54-3½	12	60-4	Own	Ro	58	Own	49
DR	DR	E-W	12-158	Ce	66	Y	Whi..SP	Own	3	4.07	2-Spi	Own.....34CE	5.22	4.88	I-FW	A	818	Ds	123	13	54-3½	12	60-4	Own	Ro	71⅓	Own	50
DR	DR	DR	12-95	....	....	....	Lg...SP	GMT	4	7.23	3-Spi	Tim...53526-N	6.20	6.60	I-FW	H	436	FW	436	10	44-2½	10	54-2½	Tim	S	53½	MW	51
DR	DR	DR	12-95	....	....	....	Lg...SP	Cla	3	3.90	2-m	Tim...54555-N	.....	.....	I-FW	H	442	FW	436	‡	48-2½	....	54-2½	Cla	S	50⅓	MW	52
DR	DR	DR	12-95	Su	....	N	Lg...SP	Cla	3	5.00	2-Spi	Tim..53570-TW	5.14	.....	I-FW	A	496	Ds	88	8	49¾-3	10	58-3	Tim	S	64	MW	53
N	DR	Exi	24-158	Ce	....	Y	N	N	....	.....	2-Spi	Tim..........	6.50	.....	I-FW	A	729	Ds	84	9	56-3½	14	56-3½	Tim	S	64½	Bd	54
DR	DR	Exi	12-111	Su	....	N	Lg...SP	Spi	3	3.55	2-Spi	Tim..........	5.14	.....	I-FW	A	464	Ds	105	8	56-3½	11	56-3½	Tim	S	64½	MW	55
DR	DR	DR	12-113	Su	....	N	Lg...SP	Cla	3	4.88	2-Spi	Tim..........	4.11	.....	I-FW	A	620	Ds	88	10	49¾-3	13	58-3	Tim	S	....	MW	56
DR	DR	Exi	12-126	Ce	....	Y	Lg...SP	Spi	3	3.32	2-Spi	Tim..........	5.86	.....	I-FW	A	703	Ds	100	10	59-3	12	58-4	Tim	S	68	MW	57
DR	DR	Exi	12-126	Ce	....	Y	Lg...SP	Spi	3	3.32	2-Spi	Tim..........	5.86	.....	I-FW	A	703	Ds	100	10	59-3	13	58-4	Tim	Ro	77	MW	58
N	DR	Exi	24-180	Ce	....	Y	N	N	....	.....	2-Spi	Tim..........	6.12	.....	I-FW	A	867	Ds	102	9	58-4	15	58-4	Tim	Ro	85	Bd	59
N	DR	Exi	12-126	Ce	67	Y	Lg...SP	Spi	4	4.36	2-Spi	Tim.....59032	3.58	4.11	I-FW	A	822	Ds	126	12	60-4	12	74-4	Tim	S	78½	MW	60
DR	DR	Exi	12-126	Ce	70	Y	Lg...SP	Spi	4	4.36	2-Spi	Tim.....59032	3.58	4.11	I-FW	A	822	Ds	126	12	60-4	12	74-4	Tim	S	78½	MW	61
DR	DR	Exi	12-95	Ce	....	Y	Lg...SP	Spi	3	3.32	2-Spi	Tim..........	4.09	3.58	I-FW	A	913	Ds	126	11	58-4	16	62-4	Tim	S	87	MW	62
N	DR	Exi	24-225	Ce	....	Y	Own..SP	Own	....	.....	2-Spi	Tim..........	3.5[illegible]	.....	I-FW	A	913	Ds	126	11	58-4	16	62-4	Tim	S	87	MW	63

e—Accessory Drive
E-W—Exide or Willard Battery
Exi—Exide (Electric Storage Battery Co.)
f—Valve lifters or Rocker Arms and Shafts
FH—Front End, under Hood
FI—Front, Inside
Fo—Ford Motor Co.
Fu—Fuller Mfg. Co.
FW—Four Wheels
q—Timing Gears

G.M.T.—General Motors Truck & Coach Mfg. Co.
h—Also to head of piston for cooling
H—Hydraulic
Her—Hercules Motor Corp.
Ho—Horizontal
HS—Hall-Scott Motor Car Co.
I—In-Head (Valves)
I—Internal (Brakes)
L—At Side (Valves)

Lg—Long Mfg. Co. LN—Leece-Neville Co.
m—1 Spicer and 1 Thompson Products
MW—Motor Wheel Corp.
Mec—Mechanics Universal Joint Div.
N—No or None
Par—Parlor Coach
R—Rear (Engine Location)
Ro—Ross Gear & Tool Co.
S—Saginaw Steering Gear Div.
SB—School Bus

SP—Single Plate, Dry
Spi—Spicer Mfg. Co.
Str—Stromberg Carburetor Div.
Su—Suction
Tim—Timken Detroit Axle Co.
UFA—Under Floor, Amidship
Up—Updraft Whi—White Motor Co.
WL—W. C. Lipe, Inc.
Wil—Willard Storage Battery Co.
Y—Yes Zen—Zenith Carburetor Co.

American Stock, Marine and

Line Number	MAKE AND MODEL		Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated Hp. (A.M.A.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio - to 1	Maximum Torque at R.P.M. (Lb. Ft.)	CYLINDERS: No. Cast in One Piece	CYLINDERS: Liners—Type	Crankcase—Upper Half Integral with Cylinders?	VALVES: Arrangement	VALVES: Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.): Intake	Max. Head Diameter (In.): Exhaust	Min. Port Diameter (In.): Intake	Min. Port Diameter (In.): Exhaust	Lift (In.): Intake	Lift (In.): Exhaust	Stem Diameter (In.): Intake	Stem Diameter (In.): Exhaust
1	Allis-Chalmers	B-15	Tr, Ind	4-3¼x3½	16.9	22-1800	116.0	4.92	74-1100	4	W	In	I	Sil	1.43	1.31	1.20	1.03	.374	.374	.341	.341
2	Allis-Chalmers	W-25	Tr, Ind	4-4x4	25.6	40-1800	201.0	5.00	128-1200	4	W	In	I	Sil	1.68	1.50	1.50	1.32	.376	.376	.372	.372
3	Allis-Chalmers	U-40	Tr, Ind	4-4½x5	32.4	51-1400	318.0	4.74	200-1000	4	W	In	I	Sil	2.03	1.78	1.75	1.50	.375	.375	.372	.372
4	Allis-Chalmers	E-60	Tr, Ind	4-5¼x6½	44.1	70-1200	563.0	5.20	370-750	4	W	In	I	Sil	2.21	2.21	2.00	2.00	.440	.417	.497	.497
5	Allis-Chalmers	L-90	Tr, Ind	6-5¼x6½	66.1	117-1200	844.0	5.20	590-700	6	W	In	I	Sil	2.21	2.21	2.00	2.00	.440	.417	.497	.497
6	Autocar	315	T	6-3¾x4¾	33.7	90-2600	315.0	6.00	220-1000	6	N	Se	L	Sil	1.75	1.65	1.56	1.43	.375	.375	.437	.437
7	Autocar	358	T	6-4x4¾	38.4	100-2600	358.0	5.80	270-1000	6	N	Se	L	Sil	1.90	1.78	1.68	1.56	.375	.375	.437	.437
8	Autocar	408	T	6-4$\frac{1}{16}$x5¼	39.6	110-2400	408.0	5.50	295-1000	6	N	Se	L	Sil	2.06	1.93	1.87	1.75	.375	.375	.437	.437
9	Autocar	447	T	6-4¼x5¼	43.3	116-2400	447.0	5.50	333-900	6	N	Se	L	Sil	2.06	1.93	1.87	1.75	.375	.375	.437	.437
10	Autocar	501	T	6-4½x4¼	48.6	127-2300	501.0	5.50	375-800	6	N	Se	L	Sil	2.06	1.93	1.87	1.75	.375	.375	.437	.437
11	Brennan	Imp. De Luxe	M	4-2x3	7.5	20-3900	45.0	7.00	31-2500	4	N	Se	I	Sil	1.00	1.00	.87	.87	.250	.250	.312	.312
12	Brennan	Imp. De Luxe Special	M	4-2¼x3⅛	8.0	25-4000	50.0	7.40	34-3200	4	N	Se	L	Sil	1.00	1.00	.87	.87	.250	.250	.312	.312
13	Brennan	20	Tr, Ind	4-2¼x3⅛	8.0	20-3900	50.0	7.40	34-3200	4	N	Se	L	Sil	1.00	1.00	.87	.87	.250	.250	.312	.312
14	Brennan	M	M	4-4x5	25.6	40-2000	251.0	5.00	155-1000	4	N	Se	L	Sil								
15	Brennan	E-4	M	4-4½x5	32.4	50-1500	318.0	5.00	203-1000	4	N	Se	L	Sil	2.00	2.00	1.87	1.87	.375	.375	.375	.375
16	Brennan	CE	T, Tr, Ind	4-4½x5	32.4	50-1600	318.0	5.00	203-1000	4	N	Se	L	Sil	2.00	2.00	1.87	1.87	.375	.375	.375	.375
17	Brennan	90	M	6-4x5½	38.4	100-2500	415.0	6.00	278-900	3	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
18	Brennan	B-70	T, B, Ind	6-4x5½	38.4	85-2000	415.0	6.00	278-900	3	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
19	Brennan	125	M	6-4⅜x5½	45.9	125-2200	500.0	6.00	350-1200	3	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
20	Brennan	B-100	T, B	6-4⅜x5½	45.9	100-2000	500.0	6.00	350-1200	3	N	Se	I	Sil	2.12	2.12	2.00	2.00	.375	.375	.437	.437
21	Brennan	150	M	6-4½x6½	48.6	150-2000	620.3	6.00	500-1200	3	N	Se	I	Sil	2.50	2.50	2.12	2.12	.437	.437	.500	.500
22	Brennan	150	T,B,Tr,Ind	6-4½x6½	48.6	150-2200	620.3	6.00	500-1200	3	N	Se	I	Sil	2.50	2.50	2.12	2.12	.437	.437	.500	.500
23	Bridgeport	F-5	M	1-3¾x4½	....	6-1200	49.0			1	N	In	I	NS	1.43	1.43			.312	.312		
24	Bridgeport	F-10	M	2-3¾x4½	....	12-1200	99.0			2	N	In	I	NS	1.43	1.43			.312	.312		
25	Bridgeport	F-20	M	4-2¾x4	....	25-2500	95.0			4	N	In	L	CNS	1.12	1.12			.312	.312		
26	Bridgeport	F-25	M	4-3$\frac{5}{16}$x3⅞	....	50-2500	134.0			4	N	In	L	CNS	1.37	1.25			.312	.312		
27	Bridgeport	Pilot	M	4-4½x5	....	55-2000	283.0			4	N	In	L	NS	1.62	1.62			.375	.375		
28	Bridgeport	Piloteer	M	6-4⅜x4¾	....	80-2000	428.0			6	N	In	L	Sil	1.75	1.75			.375	.375		
29	Buda	HP-205	T, Tr	4-3$\frac{13}{16}$x4½	23.2	51-2400	205.0	4.76	132-1200	4	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
30	Buda	HP-217	T, Tr	4-3$\frac{13}{16}$x4¾	23.2	55-2400	217.0	5.50	148-1000	4	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
31	Buda	4HM-217-MD	M	4-3$\frac{13}{16}$x4¾	....	56-2400	217.0	5.70	148-1000	4	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
32	Buda	4HM-217-MHD	M	4-3$\frac{13}{16}$x4¾	....	48-1800	217.0	5.70	148-1000	4	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
33	Buda	4HM-217-HD	M	4-3$\frac{13}{16}$x4¾	....	30-1200	217.0	5.70	148-1000	4	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
34	Buda	KT-281	Tr	4-4⅛x5¼	27.2	49-1750	281.0	4.50	173-1000	4	N	Se	L	Sil	1.87	1.87	1.62	1.62	.281	.312	.372	.372
35	Buda	YR-425	T	4-4¾x6	36.0	57-1400	425.3	3.80	264-700	4	N	Se	L	2112	2.37	2.37	2.12	2.12	.281	.312	.434	.434
36	Buda	BTU	T, B, Tr	4-5x6½	40.0	61-1200	510.5	4.65	360-650	4	N	Se	L	2112	2.50	2.50	2.25	2.25	.375	.375	.434	.434
37	Buda	FR	T, B, Tr	4-5½x6½	48.5	78-1200	618.0	4.60	405-650	4	N	Se	L	2112	2.50	2.50	2.25	2.25	.375	.375	.434	.434
38	Buda	JV-4	Tr Ind	4-5¾x7⅛	52.9	85-1200	740.0	3.85	472-750	2	N	Se	L	Sil	2.75	2.78	2.50	2.50	.375	.375	.497	.497
39	Buda	JK-4	Tr, Ind	4-6x7⅛	57.6	115-1200	806.0	4.70	560-700	2	N	Se	L	2112	2.93	2.93	2.50	2.50	.375	.375	.497	.497
40	Buda	JL-877	Tr, Ind	4-6¼x7⅛	62.5	122-1200	874.0	4.80	628-700	2	N	Se	L	2112	2.93	2.93	2.50	2.50	.375	.375	.497	.497
41	Buda	HP-260	T, B	6-3½x4½	29.4	68-2800	260.0	4.75	165-1200	6	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
42	Buda	HP-298	T, B, Tr	6-3¾x4½	33.7	77-2800	298.0	4.75	190-1100	6	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
43	Buda	HP-326	T, B, Tr	6-3$\frac{13}{16}$x4¾	34.8	78-2400	326.0	5.40	220-1000	6	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
44	Buda	6DHM-326-MD	M	6-3$\frac{13}{16}$x4¾	....	80-2400	326.0	5.70	220-1000	6	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
45	Buda	6DHM-326-MHD	M	6-3$\frac{13}{16}$x4¾	....	70-1800	326.0	5.70	220-1000	6	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
46	Buda	6DHM-326-HD	M	6-3$\frac{13}{16}$x4¾	....	46-1200	326.0	5.70	220-1000	6	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
47	Buda	K-369	T, B	6-4$\frac{1}{16}$x4¾	39.6	99-2800	369.0	4.73	234-1100	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
48	Buda	K-393	T, B, Tr	6-4$\frac{3}{16}$x4¾	42.0	101-2400	393.0	4.80	260-1200	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
49	Buda	K-428	T, B, Tr	6-4⅜x4¾	45.9	107-2400	428.0	5.33	302-1000	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
50	Buda	6KM-428-MD	M	6-4⅜x4¾	....	110-2400	428.0	5.50	280-1200	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
51	Buda	6KM-428-MHD	M	6-4⅜x4¾	....	96-1800	428.0	5.50	280-1200	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
52	Buda	6KM-428-HD	M	6-4⅜x4¾	....	60-1200	428.0	5.50	280-1200	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
53	Buda	L-525	T, B, Tr	6-4½x5½	48.6	110-2400	525.0	4.75	340-800	6	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
54	Buda	LO-525	T, B, Tr	6-4½x5½	48.6	135-2400	525.0	5.00	384-1100	6	N	In	I	2112	1.96	1.68	1.75	1.50	.468	.468	.372	.372
55	Buda	GF-638	T, B, Tr	6-4¾x6	54.1	134-2000	638.0	4.75	405-1000	6	N	Se	L	2112	2.50	2.37	2.25	2.12	.375	.375	.434	.434
56	Buda	M-766	T, B, Tr	6-5x6½	60.0	155-1800	765.8	5.00	500-1000	6	N	In	I	2112	2.39	2.14	2.12	1.87	.540	.540	.435	.435
57	Buda	M-712	T, B, Ind	6-5⅛x5¾	63.0	158-2000	712.0	5.00	473-1100	6	W	In	I	CNS	2.64	2.01	2.37	1.75	.540	.540	.435	.435
58	Buda	M-858	T, B, Ind	6-5⅝x5¾	76.0	190-2000	858.0	5.00	569-1000	6	W	In	I	CNS	2.64	2.01	2.37	1.75	.540	.540	.435	.435
59	Buda	M-970	T, B, Ind	6-5⅝x6½	76.0	195-1800	969.2	5.00	625-1100	6	W	In	I	CNS	2.64	2.01	2.37	1.75	.540	.540	.435	.435
60	Buda	JV-6	Tr, Ind	6-5¾x7¼	79.3	142-1200	1129.5	3.88	696-600	2	N	Se	L	Sil	2.75	2.78	2.50	2.50	.438	.438	.497	.497
61	Buda	JK-6	Tr, Ind	6-6x7¼	86.4	188-1400	1230.0	4.70	810-700	2	N	Se	L	2112	2.93	2.93	2.50	2.50	.438	.438	.497	.497
62	Buda	JL-1335	Tr, Ind	6-6¼x7¼	93.7	164-1000	1334.6	4.40	915-600	2	N	Se	L	2112	2.93	2.93	2.50	2.50	.438	.438	.497	.497
63	Buda	P-1879	Ind	6-6¾x8¾	109.0	232-1000	1879.0	4.50	1305-750	6	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.558	.558
64	Buffalo	Navy-BA	M, Ind	4-3½x5	....	45-1800	192.0	5.00	131-1400	4	N	In	L	Sil	1.93	1.93	1.75	1.75	.312	.375	.375	.375
65	Buffalo	RA-4	M, Ind	4-5⅞x7	....	155-1800	759.0	5.00	525-1200	2	N	Se	I	Sil	2.87	2.87	2.62	2.62	.540	.540	.500	.500
66	Buffalo	RAB-4	M, Ind	4-6½x7	....	185-1800	929.0	5.00	635-1200	2	N	Se	I	Sil	3.12	2.87	2.87	2.62	.540	.540	.500	.500
67	Buffalo	ATT-4	M, Ind	4-8¼x9	....	275-1200	1925.0	4.50	1176-900	2	N	Se	L	Sil	4.12	4.06	3.62	3.44	.812	.812	.683	.683
68	Buffalo	RA-6	M, Ind	6-5⅞x7	....	230-1800	1138.0	5.00	790-1200	2	N	Se	I	Sil	2.87	2.87	2.62	2.62	.540	.540	.500	.500
69	Buffalo	RAB-6	M, Ind	6-6½x7	....	280-1800	1333.0	5.00	955-1200	2	N	Se	I	Sil	3.12	2.87	2.87	2.62	.540	.540	.500	.500
70	Buffalo	ATT-6	M, Ind	6-8¼x9	....	425-1200	2887.0	4.50	1764-900	2	N	Se	L	Sil	4.12	4.06	3.62	3.44	.812	.812	.683	.683
71	Buffalo	RA-8	M, Ind	8-5⅞x7	....	300-1800	1518.0	5.00	1050-1200	2	N	Se	I	Sil	2.87	2.87	2.62	2.62	.540	.540	.500	.500
72	Buffalo	RAB-8	M, Ind	8-6½x7	....	375-1800	1858.0	5.00	1275-1200	2	N	Se	I	Sil	3.12	2.87	2.87	2.62	.540	.540	.500	.500
73	Buffalo	ATT-8	M, Ind	8-8¼x9	....	565-1200	3849.0	4.50	2352-900	2	N	Se	L	Sil	4.12	4.06	3.62	3.44	.812	.812	.683	.683
74	Capitol	T-12	M	12-5¾x6¼	....	600-2000	1947.0	5.30		3	N	Se	I	Sil	2.06	2.06			.500	.500	.500	.500
75	Chevrolet	1940	T, B	6-3½x3¾	29.4		216.5	6.25		6	N	In	I	SC	1.64	1.46	1.25	1.20	.235	.312	.341	.340
76	Chris-Craft	■B	M	4-3¼x4	....	60-3200	132.7	7.50		4	N	In	L	Sil	1.50	1.37	1.25	1.12	.312	.312	.312	.312
77	Chris-Craft	▼■K	M	6-3⅜x4⅛	....	95-3200	221.4	7.50		6	N	In	L	Sil	1.62	1.40	1.46	1.25	.312	.312	.312	.312
78	Chris-Craft	▼■M	M	6-4x4¼	....	135-3000	320.4	7.50		6	N	In	L	Sil	1.84	1.75	1.62	1.50	.356	.356	.375	.375
79	Chris-Craft	▼■W	M	6-4¼x4¾	....	160-3000	404.3	6.40		6	N	In	L	Sil	2.06	1.87	1.81	1.62	.388	.388	.375	.375
80	Chris-Craft	▼A-120	M	8-5x5¼	....	250-2300	824.7	6.00		2	N	Se	L	Sil	2.53	2.53	2.31	2.31	.375	.375	.437	.437
81	Chris-Craft	A-120A	M	8-5$\frac{1}{16}$x5¼	....	350-2850	845.4	7.80		2	N	Se	L	Sil	2.65	2.65	2.43	2.43	.531	.468	.437	.437
82	Chrysler	■ACE-PC	M	6-3⅛x4⅜	....	78-3200	201.3	6.70	152-1700	6	N	In	L	Sil	1.46	1.46	1.25	1.25	.312	.312	.340	.340
83	Chrysler	■Crown-M2	M	6-3⅜x4½	....	103-3200	241.6	6.50	195-1400	6	N	In	L	Sil	1.65	1.53	1.37	1.31	.339	.339	.340	.340
84	Chrysler	▼Royal-M3	M	8-3¼x4⅞	....	143-3200	323.5	6.10	260-2200	8	N	In	L	Sil	1.53	1.35	1.37	1.20	.376	.379	.340	.340
85	Climax	G4C	Tr, Ind	4-4½x5¼	34.2	47-1200	334.0	4.75	217-800	4	W	In	I	Sil	2.00	2.00	1.75	1.75	.406	.406	.375	.375
86	Climax	H4B	Tr, Ind	4-5⅛x6¼	42.0	73-1200	516.0	4.10	342-800	4	W	In	I	Sil	2.37	2.37	2.12	2.12	.437	.437	.437	.437
87	Climax	N4B	Tr, Ind	4-5¾x6½	52.9	100-1200	675.0	4.30	463-650	4	N	In	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
88	Climax	R41	Tr, Ind	4-6x7	57.6	112-1200	792.0	4.20	550-700	2	N	Se	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
89	Climax	R61	Tr, Ind	6-6x7	86.4	165-1200	1187.4	4.20	820-650	2	N	Se	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
90	Climax	R81	Ind	8-6x7	115.2	230-1200	1583.0	4.20	1140-650	2	N	Se	I	Sil	2.50	2.50	2.25	2.25	.500	.500	.562	.562
91	Continental	Y-4069	C, Tr, Ind	4-2½x3½	10.0	26-3300	68.7	6.15	49-1500	4	N	In	L	XCR	1.20	1.01	1.06	.875	.291	.292	.314	.313
92	Continental	Y-4091	C, Tr, Ind	4-2⅞x3½	13.2	34-3300	90.9	6.00	66-1700	4	N	In	L	XCR	1.20	1.01	1.06	.875	.291	.292	.314	.313
93	Continental	Y-4112	C, Tr, Ind	4-3$\frac{3}{16}$x3½	14.4	41-3300	111.7	6.00	84-1500	4	N	In	L	XCR	1.20	1.01	1.06	.875	.291	.292	.314	.313
94	Continental	F-4124	C,T,Tr,Ind	4-3x4⅜	14.4	47-3300	123.7	6.00	94-1600	4	N	In	L	XCR	1.51	1.32	1.37	1.18	.281	.280	.341	.339
95	Continental	F-4140	C,T,Tr,Ind	4-3$\frac{3}{16}$x4⅜	16.2	52-3200	139.6	6.00	106-1600	4	N	In	L	XCR	1.51	1.32	1.37	1.18	.281	.280	.341	.339
96	Continental	F-4162	C,T,Tr,Ind	4-3$\frac{7}{16}$x4⅜	18.9	58-3300	162.4	5.75	122-1600	4	N	In	L	XCR	1.51	1.32	1.37	1.18	.281	.280	.341	.339
97	Continental	F-6170	C,T,Tr,Ind	6-3x4	21.6	65-3460	169.6	6.60	124-1200	6	N	In	L	XCR	1.51	1.32	1.37	1.18	.284	.284	.341	.339
98	Continental	F-6199	C,T,Tr,Ind	6-3¼x4	25.4	68-3300	199.1	6.00	150-1200	6	N	In	L	XCR	1.51	1.32	1.37	1.18	.284	.284	.341	.339

(For abbreviations see pages 214-215)

Commercial Vehicle Engines

VALVES — Seats — Angle (Deg.)	VALVES — Seats — Inserts Used?	VALVES — Seats — Insert Material (S.A.E. No.)	Front End Drive—Type	PISTONS — Material	PISTONS — Length (In.)	PISTONS — Weight with Pins, Rings Bushings (Oz.)	PISTONS — Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	CONNECTING RODS — Material	CONNECTING RODS — Center to Center Length (In.)	CONNECTING RODS — Weight with Bushing and Cap (Oz.)	CRANKSHAFT — Material	CRANKSHAFT — Counterbalance Used?	CRANKSHAFT — Crank-Pin — Diameter and Length (In.)	CRANKSHAFT — Main Bearings — Number	CRANKSHAFT — Main Bearings — Diameter and Length (In.) — Front	CRANKSHAFT — Main Bearings — Diameter and Length (In.) — Rear	Oil Pressure To—	Spark Plug—Thread Size	CARBURETOR — Make	CARBURETOR — Size	Engine Weight without Carburetor or Ignition (Lb.)	OVERALL DIMENSIONS (In.) — Width	OVERALL DIMENSIONS (In.) — Height	OVERALL DIMENSIONS (In.) — Length	Line Number
45	N	......	HG	CI	3.68	39	.813x2.87	3	1040	6½	30	1045	N	1.93x1.22	3	2.25x1.62	2.25x1.50	ac	14 mm	Zen	⅞	360	16 5/16	31⅝	27	1
45	E	TA	HG	CI	4.43	67	.989x3.50	4	1040	7½	42	1045	N	2.37x1.54	3	2.43x1.62	2.50x1.75	abce	14 mm	Zen	1	500	24	31⅜	33⅝	2
30	E	TA	HG	CI	5.25	92	1.31x4.06	4	1040	9½	92	1045	N	2.37x2.37	3	2.50x2.31	2.50x2.75	abcde	⅞-18	Zen	1¼	985	28	37½	43¾	3
45	E	TA	HG	CI	6.78	162	1.50x4.87	4	1040	13	182	1045	N	2.75x3.24	3	3.00x3.50	3.00x4.75	abcde	⅞-18	Zen	1½	1835	27	44⅞	55⅝	4
45	E	TA	HG	CI	6.78	162	1.50x4.87	4	1040	13	182	1045	N	2.75x3.24	4	3.00x3.50	3.00x4.75	abcde	⅞-18	Zen	1½	2875	28	50	62½	5
45	E	71360	HG	Al	4.87	36	1.12x3.18	4	2340	10¼	73	1050	N	2.25x1.44	7	3.00x1.87	3.00x2.62	abcdef	⅞-18	Str	1½	1070	23 1/16	34⅝	43 13/16	6
45	E	71360	HG	Al	4.87	43	1.12x3.43	4	2340	10¼	73	1050	N	2.25x1.44	7	3.00x1.87	3.00x2.62	abcdef	⅞-18	Str	1½	1080	23 1/16	34⅝	43 13/16	7
45	E	71360	HG	Al	5.75	47	1.12x3.43	4	2340	10¼	83	1050	N	2.50x1.58	7	3.25x1.87	3.25x2.87	abcdef	18 mm	Str	1¾	1270	26⅛	38⅞	47 7/16	8
45	E	71360	HG	Al	5.75	51	1.12x3.68	4	2340	10¾	83	1050	N	2.50x1.58	7	3.25x1.87	3.25x2.87	abcdef	18 mm	Str	1¾	1270	26⅛	38⅞	47 7/16	9
45	E	71360	HG	Al	5.75	57	1.12x3.93	4	2340	10¼	88	1050	N	2.50x1.58	7	3.25x1.87	3.25x2.87	abcdef	18 mm	Str	1¾	1270	26⅛	38⅞	47 7/16	10
45	N	......	HG	Al	......	6	.62x1.87	3	1045	5¾	14	1045	Y	1.31x1.25	2	2.50x1.50	2.50x1.50	abce	14 mm	Til	⅝	160§	12¾	17⅝	29	11
45	N	......	HG	Al	......	6	.62x2.00	3	1045	5¾	14	1045	Y	1.31x1.25	3	2.50x1.50	2.50x1.50	abce	14 mm	Zen	⅝	165§	12¾	17⅝	29	12
45	N	......	HG	Al	......	6	.62x2.00	3	1045	5¾	14	1045	Y	1.31x1.25	3	2.50x1.50	2.50x1.50	abce	14 mm	Zen	⅝	128	12¾	17⅝	18¾	13
...		......	HG	SS	4.50	64	1.17x3.87	4	1045	11	64	1045	....	2.50x2.00	3	2.12x4.25	2.12x2.25	abcer	....	Str	1¼	650	12 7/16	19½	53¾	14
45	N	......	HG	SS	5.00	72	1.17x4.00	4	1045	11	64	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcder	....	Str	1¼	950	16	18	53	15
45	N	......	HG	SS	5.00	80	1.17x4.00	4	1045	11	64	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abce	....	Str	1¼	600	21	29¾	37⅛	16
45	N	......	HG	SS	4.50	64	1.17x3.87	4	1045	11	64	CNS	Y	2.50x2.00	3	2.75x4.50	2.75x3.00	abceg	....	Str	1½	800	19¾	24¾	65	17
45	N	......	HG	SS	4.50	64	1.17x3.87	4	CNS	11	65	CNS	Y	2.50x2.00	3	2.75x4.50	2.75x3.00	abce	....	Str	1½	800	25¾	33¼	49	18
45	N	......	HG	SS	5.50	70	1.25x3.87	5	CNS	11	65	CNS	Y	2.50x2.00	3	2.75x4.50	5.75x4.50	abceg	....	Str	1½	900	19¾	24¾	65	19
45	N	......	HG	SS	4.50	76	1.25x4.00	4	CNS	11	65	CNS	Y	2.50x2.00	3	2.75x4.50	2.75x3.00	abce	....	Str	1½	875	25¾	33¼	49	20
45	N	......	BG	SS	5.00	72	1.37x4.00	5	CNS	12	80	CNS	Y	2.62x2.67	7	2.62x5.00	2.62x3.50	abce	....	Str	1¾	1450§	20	30	74	21
45	N	......	BG	SS	5.00	72	1.37x4.00	5	CNS	12	80	CNS	Y	2.62x2.67	7	2.62x5.00	2.62x3.50	abce	....	Str	1¾	1000	22	40	54	22
45	N	......	SG	CI	4.00	58	.75x3.62	3	CS	9	60	CS	Y	1.37x2.00	2	1.37x2.50	1.37x2.50	splash	⅞-18	Zen	1	155	14	22½	21	23
45	N	......	SG	CI	4.00	58	.75x3.62	3	CS	9	60	CNS	Y	1.37x2.00	2	1.50x3.00	1.50x3.00	splash	⅞-18	Zen	1¼	320	14	24	32	24
45	N	......	HG	CI	3.25	41	.62x2.62	3	CS	9	47	CS	N	1.50x1.75	3	2.75x1.50	2.75x1.50	abcd	⅞-18	Zen	1¼	397	17	22	35	25
45	N	......	HG	Al	3.50	50	.75x3.18	3	AS	9	50	CNS	N	1.75x1.50	3	1.87x2.00	1.87x1.50	abcd	⅞-18	Zen	1¼	460	20	22½	35	26
45	N	......	HG	CI	4.00	59	1.37x4.12	3	AS	9½	60	CNS	N	2.00x2.25	3	2.00x2.75	2.00x1.12	abcde	⅞-18	Zen	1¼	950	20	28	53	27
45	N	......	HG	CI	4.00	61	1.25x4.25	3	CS	9⅝	60	CS	N	2.50x1.75	7	3.00x2.00	3.00x3.00	abcd	⅞-18	Zen	1½	1650	18	31	62	28
45	N	......	HG	SS	3.75	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1¼	590	26	29 11/32	31 31/32	29
45	N	......	HG	CI	3.75	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1¼	590	25¾	31 1/16	38 9/32	30
45	N	......	HG	SS	3.75	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1¼	770	23¼	31 1/16	43⅜	31
45	N	......	HG	SS	3.75	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1¼	770	23¼	31 1/16	43⅜	32
45	N	......	HG	SS	3.75	42	1.12x3.22	4	CS	9½	42	CS	N	2.12x1.62	5	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1¼	770	23¼	31 1/16	43⅜	33
45	N	......	HG	CI	5.00	65	1.50x3.31	4	CS	11¼	89	CS	N	2.00x2.25	3	1.87x2.87	2.12x3.44	abcde	⅞-18	Zen	1¼	875	25¾	33¼	40 15/16	34
45	E	JM	HG	CI	6.12	111	1.43x4.11	4	AS	13¼	106	CS	N	2.50x2.87	3	2.50x3.00	2.50x4.50	abcde	⅞-18	Zen	1½	1087	25¾	36 15/16	47½	35
45	E	......	HG	CI	6.75	142	1.37x4.37	4	AS	14⅜	163	CS	N	2.50x3.12	3	2.25x4.12	2.62x4.69	abcde	⅞-18	Zen	1½	1409	28¾	40 7/16	52 9/16	36
45	E	DC	HG	CI	6.75	144	1.37x4.87	4	AS	14⅜	163	CS	N	2.50x3.12	3	2.25x4.12	2.62x4.69	abcde	⅞-18	Zen	1½	1430	28¾	40 7/16	52 9/16	37
45	E	JM	HG	CI	6.87	172	2.00x4.87	4	AS	14⅝	252	CS	N	3.00x3.31	3	3.00x4.75	3.00x4.75	abcde	⅞-18	Zen	1¾	1925	30	47 11/32	58½	38
30	E	DC	HG	CI	6.87	172	2.00x5.12	4	AS	14⅝	252	CS	N	3.00x3.31	3	3.00x4.75	3.00x4.75	abcde	⅞-18	Zen	1¾	1925	30	44 11/32	58½	39
30	E	DC	HG	CI	6.87	199	2.00x5.33	4	AS	14⅝	227	CS	N	3.00x3.31	3	3.00x4.75	3.00x4.75	abcde	⅞-18	Zen	1¾	1925	30	40 11/32	58½	40
45	E	DC	HG	CI	3.75	37	1.12x2.97	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33 1/16	39 25/32	41
45	E	DC	HG	CI	3.75	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33 1/16	39 25/32	42
45	E	DC	HG	A1	3.75	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcde	18 mm	Zen	1½	825	25¾	33 1/16	39 25/32	43
45	N	......	HG	A1	3.75	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1½	......	22⅝	28 11/16	54½	44
45	N	......	HG	A1	3.75	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1½	......	22⅝	28 11/16	54½	45
45	N	......	HG	A1	3.75	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcder	18 mm	Str	1½	......	22⅝	28 11/16	54½	46
45	E	DC	HG	CI	4.37	63	1.25x3.47	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	900	25¾	30 17/32	47 9/32	47
45	E	DC	HG	CI	4.37	....	1.25x3.47	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	905	25¾	30 17/32	47 9/32	48
45	E	DC	HG	A1	4.37	....	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	905	25¾	30 17/32	47 9/32	49
45	E	DC	HG	CI	4.37	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcder	18 mm	Str	1¾	1320	24 13/16	29½	60 11/32	50
45	E	DC	HG	CI	4.37	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcder	18 mm	Str	1¾	1320	24 13/16	29½	60 11/32	51
45	E	DC	HG	CI	4.37	68	1.25x3.82	4	CS	9½	58	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcder	18 mm	Str	1¾	1320	24 13/16	29½	60 11/32	52
45	E	DC	HG	CI	4.75	88	1.25x3.81	4	CS	11	66	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcde	18 mm	Zen	1¾	950	25¾	33 7/16	47 13/16	53
30	E	JM	HG	A1	4.75	88	1.25x3.81	5	AS	11	78	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdeg	14 mm	Zen	1¾	1195	27 1/16	38 13/32	49 13/32	54
30	E	DC	HG	CI	6.12	94	1.62x4.00	4	AS	13¼	139	CS	N	3.00x2.25	4	3.00x2.25	3.00x3.69	abcde	18 mm	Zen	1¾	1525	28¾	43 13/32	53 15/16	55
30	E	DC	HG	A1	6.00	....	1.75x4.15	5	AS	12½	164	CS	N	3.24x2.12	7	3.50x3.00	3.50x3.00	abcdeg	18 mm	Zen	1¾	2150	31 1/16	49 1/16	57½	56
30	E	To	HG	CI	6.73	....	1.75x4.35	5	6140	12½	....	CS‡	N	3.24x2.12	7	3.50x2.43	3.50x2.43	abcde	14 mm	......	2	2025	28⅛	46⅛	58 1/32	57
30	E	To	HG	CI	6.73	....	1.75x4.88	5	6140	12½	....	CS‡	N	3.24x2.12	7	3.50x2.43	3.50x2.43	abcde	14 mm	......	2	2025	28⅛	45⅞	58 1/32	58
30	E	To	HG	CI	6.73	....	1.75x4.88	5	6140	12½	....	CS‡	N	3.24x2.12	7	3.50x2.43	3.50x2.43	abcde	14 mm	Zen	2	......	28⅛	46⅛	58 1/32	59
45	E	JM	HG	CI	6.87	172	2.00x4.87	4	AS	15¼	239	CS	Y	3.50x3.31	4	3.50x4.75	3.50x4.75	abcde	⅞-18	Zen	2	3700	28⅝	43	74 1/32	60
30	E	DC	HG	CI	6.87	196	2.00x5.12	4	AS	15¼	239	CS	Y	3.50x3.31	4	3.50x4.75	3.50x4.75	abcde	⅞-18	Zen	2	3700	28⅝	43	74 1/32	61
30	E	DC	HG	CI	6.87	199	2.00x5.33	4	AS	15¼	239	CS	Y	3.50x3.31	4	3.50x4.75	3.50x4.75	abcde	⅞-18	Zen	2	3700	28⅝	43	74 1/16	62
45	E	DC	HG	Ala	9.31	263	2.75x5.53	5	CS	17¾	430	CS	Y	3.75x3.50	7	3.75x3.31	3.75x3.48	abcdeg	18 mm	Zen(2)	2	......	48	68⅛	86 1/32	63
45	N	......	HG	CI	3.75	37	1.09x3.31	3	1035	10¼	50	1045	N	1.87x2.12	3	2.25x3.00	2.19x2.87	Splash	⅞-18	Zen	1	720	22	28	53	64
45	E	AS	HG	A1	6.12	132	1.50x5.62	5	3135	14	147	3140	Y	3.00x2.37	5	3.75x4.12	3.75x4.50	abc	⅞-18	Zen	2½	2500	24	46	56	65
45	E	AS	HG	A1	6.50	153	1.69x6.25	5	3135	14	147	3140	Y	3.00x2.37	5	3.75x4.12	3.75x4.50	abc	⅞-18	Zen	2½	2700	24	46	56	66
45	E	AS	HG	A1	9.00	312	2.25x7.62	5	3135	21	186	3140	Y	4.25x4.00	5	5.00x7.00	5.00x7.00	abc	14 mm	Zen	2½	7000	47	54	132	67
45	E	AS	HG	A1	6.12	132	1.50x5.62	5	3135	14	147	3140	Y	3.00x2.37	7	3.75x4.12	3.75x4.50	abc	⅞-18	Zen	2	3400	24	46	94	68
45	E	AS	HG	A1	6.50	153	1.69x6.25	5	3135	14	147	3140	Y	3.00x2.37	7	3.75x4.12	3.75x4.50	abc	⅞-18	Zen	2	3500	24	46	94	69
45	E	AS	HG	A1	9.00	312	2.25x7.62	5	3135	21	186	3140	Y	4.25x4.00	7	5.00x7.00	5.00x7.00	abc	14 mm	Zen	2½	11600	47	54	160	70
45	E	AS	HG	A1	6.12	132	1.50x5.62	5	3135	14	147	3140	Y	3.00x2.37	9	3.75x4.12	3.75x4.50	abc	⅞-18	Zen	2½	4000	24	46	111	71
45	E	AS	HG	A1	6.50	153	1.69x6.25	5	3135	14	147	3140	Y	3.00x2.37	9	3.75x4.12	3.75x4.50	abc	⅞-18	Zen	2½	4200	24	46	111	72
45	E	AS	HG	A1	9.00	312	2.25x7.62	5	3135	21	186	3140	Y	4.25x4.00	9	5.00x7.00	5.00x7.00	abc	14 mm	Zen	2½	15000	47	54	188	73
45	N	......	BG	Ala	5.50	....	1.50x5.25	4	AS	10 15/16	....	CNM	N	3.00x2.50	7	3.25x....	3.25x....	abcer	18 mm	Str	......	2400§	39⅛	40⅝	97⅛	74
30	N	......	HG	CT	3.92	....	.865x3.15	3	CS	6 13/16	28	CS	Y	2.31x1.50	4	2.68x1.18	2.78x1.62	abcg	14 mm	Car	1¼	563§	20 5/16	29½	38 15/16	75
30	N	......	HG	A1	3.06	....	.750x2.87	3	......	6 9/16	....	......	N	1.75x1.12	3	2.00x1.62	2.00x1.62	ab	14 mm	Zen	1¼	456§	24⅛	23 1/16	31¾	76
30	N	......	HG	A1	3.50	....	.875x2.87	4	......	7	....	......	N	2.00x1.25	7	2.50x1.93	2.50x1.37	ab**	14 mm	Zen	1⅜	626§	24⅛	25¾	40	77
30	N	......	HG	A1	4.18	....	1.00x3.50	...	......	8	....	CS	N	2.00x1.50	7	2.50x2.12	2.50x1.37	ab	14 mm	Zen	1¾	850§	24⅛	27⅞	46 7/16	78
30	N	......	HG	A1	4.00	....	1.12x3.68	4	CNS	8⅞	....	CS	Y	2.25x1.50	7	2.62x2.75	2.62x1.75	ab	14 mm	Zen	2	1240§	26⅞	29⅜	53 11/32	79
45	N	......	HG	A1	5.87	....	1.37x4.25	4	CS	11¼	....	CS	Y	3.00x2.06	3	3.00x3.75	3.00x3.56	abc	18 mm	Hol	2	1550§	34	41	62½	80
30	N	......	HG	A1	5.87	....	1.37x4.25	4	CS	11¼	....	CS	Y	3.00x2.06	3	3.00x3.75	3.00x3.56	abc	18 mm	Hol(2)	2	1590§	34	41	62½	81
45	E	CNT	HG	A1	3.68	20	.859x2.62	4	T-1335	7 15/16	31	1040	Y	1.93x1.25	4	2.25x1.23	2.25x1.87	abce	18 mm	Zen	1¼	665§	22½	25¼	43	82
45	E	CNT	HG	A1	3.87	25	.859x2.87	4	T-1335	7⅞	34	1040	Y	2.12x1.37	4	2.50x1.31	2.50x1.87	abce	18 mm	Zen	1½	785§	22½	26⅝	45	83
45	E	CNT	HG	A1	3.87	23	.859x2.75	4	T-1335	9	36	1040	Y	2.18x1.37	5	2.70x1.65	2.70x2.09	abce	18 mm	Zen	1½	990§	22½	28 3/16	54 9/16	84
45	E	CI	SG	CI	4.87	85	1.31x4.06	5	CS	10½	167	CS	N	2.37x2.12	3	2.37x2.12	2.37x2.75	abcde	⅞-18	Zen	1¼	925	25¾	37	41¼	85
45	E	CI	SG	CI	5.87	142	1.50x4.31	5	1045	11¾	139	1045	N	2.75x2.50	3	3.00x2.87	3.00x3.62	abcde	⅞-18	Zen	1½	1350	28¾	43	47¾	86
45	N	......	SG	CI	6.75	189	1.48x5.25	5	1035	14	194	1045	N	3.00x3.00	3	3.25x3.50	3.25x4.75	abcde	⅞-18	Zen	1¾	1800	30½	46	53¼	87
45	E	CI	SG	CI	6.94	210	1.48x5.37	5	3135	16	244	3140	Y	3.00x3.00	3	3.25x3.68	3.25x4.50	abcde	⅞-18	Zen	2	2300	30 15/16	49½	57 9/16	88
45	E	CI	SG	CI	6.94	210	1.48x5.37	5	3135	16	244	4140	Y	3.00x3.50	4	3.25x3.81	3.25x4.50	abcde	⅞-18	Zen(2)	1¾	3200	29⅛	51⅜	70 15/16	89
45	E	CI	SG	CI	6.94	210	1.48x5.37	5	3135	16	244	3140	Y	3.37x3.18	5	4.00x3.62	4.00x4.50	abcde	⅞-18	Zen(2)	2	4500	35 5/16	56 13/16	97⅞	90
(h)	N	......	HG	CT	2.87	....	.703x2.06	3	CS	5¾	....	CS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	abcet	18 mm	......	⅞	298	26	22 15/16	25½	91
(h)	N	......	HG	CT	2.87	....	.703x2.44	3	CS	5¾	....	CS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	abcet	18 mm	......	⅞	305	26	22 15/16	25½	92
(h)	N	......	HG	CT	2.87	....	.703x2.75	3	CS	5¾	....	CS	N	1.50x1.18	3	1.75x1.28	1.75x1.65	abcet	18 mm	......	1	315	26	22 15/16	25½	93
(h)	E	WA	HG	CT	3.56	....	.859x2.50	4	CS	7	....	CS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	abcet	18 mm	......	1¼	400	26	26 11/32	29 7/16	94
(h)	E	WA	HG	CT	3.56	....	.859x2.68	4	CS	7	....	CS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	abcet	18 mm	......	1¼	405	26	26 11/32	29 7/16	95
(h)	E	WA	HG	CT	3.56	....	.859x2.87	4	CS	7	....	CS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	abcet	18 mm	......	1¼	410	26	26 11/32	29 7/16	96
(h)	E	WA	Ch	CT	3.75	....	.859x2.50	4	CS	7	....	CS	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	......	1¼	481	26	27¼	36 11/32	97
(h)	E	WA	Ch	CT	3.75	....	.859x2.66	4	CS	7	....	CS	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	......	1¼	491	26	27¼	36 11/32	98

(For abbreviations see pages 214-215)

American Stock, Marine and

Line Number	Make and Model	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated Hp. (A.M.A.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio - to 1	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinders: No. Cast in One Piece	Cylinders: Liners—Type	Crankcase—Upper Half Integral with Cylinders?	Valves: Arrangement	Valves: Exhaust Head Material (S.A.E. No.)	Valves: Max. Head Diameter (In.) Intake	Valves: Max. Head Diameter (In.) Exhaust	Valves: Min. Port Diameter (In.) Intake	Valves: Min. Port Diameter (In.) Exhaust	Valves: Lift (In.) Intake	Valves: Lift (In.) Exhaust	Valves: Stem Diameter (In.) Intake	Valves: Stem Diameter (In.) Exhaust
1	Continental F-6209	C,T,Tr,Ind	6-3$\frac{3}{16}$x4$\frac{3}{8}$	24.3	71-3100	209.5	5.75	154-1200	6	N	In	L	XCR	1.51	1.32	1.37	1.18	.284	.284	.341	.339
2	Continental F-6218	C,T,Tr,Ind	6-3$\frac{1}{4}$x4$\frac{3}{8}$	25.4	73-3100	217.8	5.95	162-1200	6	N	In	L	XCR	1.51	1.32	1.37	1.18	.284	.284	.341	.339
3	Continental A-6244	C,T,B,Ind	6-3$\frac{7}{16}$x4$\frac{3}{8}$	28.4	83-3200	243.6	5.40	178-1200	6	N	In	L	XCR	1.57	1.42	1.43	1.31	.311	.311	.339	.338
4	Continental M-6271	T,B,Tr,Ind	6-3$\frac{5}{8}$x4$\frac{3}{8}$	31.5	85-2800	270.9	5.75	190-1200	6	N	In	L	XCR	1.76	1.51	1.62	1.37	.354	.354	.404	.402
5	Continental M-6290	T,B,Ind	6-3$\frac{3}{4}$x4$\frac{3}{8}$	33.7	88-2750	289.9	5.70	205-1200	6	N	In	L	XCR	1.76	1.51	1.62	1.37	.354	.354	.404	.402
6	Continental M-6330	T,B,Ind	6-4x4$\frac{3}{8}$	38.4	98-2700	329.8	5.50	233-1200	6	N	In	L	XCR	1.76	1.51	1.62	1.37	.354	.354	.404	.402
7	Continental E-600	T,B,Ind	6-3$\frac{11}{16}$x4$\frac{1}{2}$	32.6	78-2650	288.3	5.43	193-900	6	N	In	L	XCR	2.06	1.87	1.81	1.62	.361	.361	.435	.432
8	Continental E-601	T,B,Ind	6-3$\frac{7}{8}$x4$\frac{1}{2}$	36.0	86-2600	318.4	5.48	214-1000	6	N	In	L	XCR	2.06	1.87	1.81	1.62	.361	.361	.435	.432
9	Continental E-602	T,B,Ind	6-4$\frac{1}{8}$x4$\frac{1}{2}$	40.8	95-2500	360.8	5.40	253-850	6	N	In	L	XCR	2.06	1.87	1.81	1.62	.361	.361	.435	.432
10	Continental E-603	T,B,Ind	6-4$\frac{1}{4}$x4$\frac{1}{2}$	43.3	98-2400	383.0	5.29	265-1000	6	N	In	L	XCR	2.06	1.87	1.81	1.62	.361	.361	.435	.432
11	Continental 20R	T,B,Ind	6-4$\frac{1}{8}$x4$\frac{3}{4}$	40.8	106-2600	380.9	4.76	276-1200	6	N	In	I	AUS	2.06	1.87	1.81	1.62	.420	.420	.435	.433
12	Continental 21R	T,B,Ind	6-4$\frac{3}{8}$x4$\frac{3}{4}$	45.9	118-2500	428.4	4.63	308-1200	6	N	In	I	AUS	2.06	1.87	1.81	1.62	.420	.420	.435	.433
13	Continental 22R	T,B,Ind	6-4$\frac{1}{2}$x5$\frac{1}{4}$	48.6	138-2400	501.0	4.50	364-1200	6	N	In	I	AUS	2.06	1.87	1.81	1.62	.420	.420	.435	.433
14	Dodge T-105	T	6-3$\frac{1}{8}$x4$\frac{3}{8}$	23.4	79-3000	201.3	6.70	154-1200	6	N	In	L	Sil	1.46	1.46	1.31	1.31	.312	.312	.340	.340
15	Dodge T-94	T	6-3$\frac{1}{4}$x4$\frac{3}{8}$	25.3	82-3000	217.7	6.50	166-1200	6	N	In	L	Sil	1.46	1.46	1.31	1.31	.312	.312	.340	.340
16	Dodge T-98	T	6-3$\frac{3}{8}$x4$\frac{1}{4}$	27.3	92-3000	228.1	6.50	176-1200	6	N	In	L	Sil	1.65	1.53	1.50	1.37	.379	.379	.340	.340
17	Dodge T-100	T	6-3$\frac{3}{8}$x4$\frac{1}{2}$	27.3	99-3000	241.5	6.50	188-1200	6	N	In	L	Tun	1.65	1.53	1.50	1.37	.379	.379	.340	.340
18	Dodge T-104	T	6-3$\frac{3}{4}$x5	33.7	100-2800	331.3	5.20	230-800	6	N	In	L	Tun	1.93	1.75	1.78	1.59	.323	.323	.371	.371
19	Elco F-42	M	4-5x6	....	90-1600	471.0	5.00	325-1050	2	W	Se	F	Sil	2.50	2.50	2.25	2.25	.303	.350	.437	.437
20	Elco F-62	M	6-5x6	....	145-1600	707.0	5.00	490-1050	2	W	Se	F	Sil	2.50	2.50	2.25	2.25	.303	.350	.437	.437
21	Ford 60HP	C, T	8-2.6x3.2	21.6	60-3500	136.0	6.60	94-2500	8	N	In	L	CNS	1.28	1.28	....	....	.251	.251	.279	.279
22	Ford 85HP	C, T, M, Ind	8-3.06x3.75	30.0	85-3800	221.0	(1)	(5)	8	N	In	L	CNS	1.54	1.54	....	....	.292	.292	.311	.311
23	Ford 95HP	C, T, B	8-3.18x3.75	32.5	95-3600	239.0	6.15	170-2100	8	N	In	L	CNS	1.54	1.54	....	....	.292	.292	.311	.311
24	Franklin 6AH-377	T,B,Tr,Ind	6-4x5	38.4	104-2500	377.0	4.90	250-1500	1	....	Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
25	Franklin 6A-377	T,B,Tr,Ind	6-4x5	38.4	104-2500	377.0	4.90	250-1500	1	....	Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
26	Franklin 6AH-400	T,B,Tr,Ind	6-4$\frac{1}{8}$x5	40.8	110-2500	400.0	5.00	268-1500	1	....	Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
27	Franklin 6A-400	T,B,Tr,Ind	6-4$\frac{1}{8}$x5	40.8	110-2500	400.0	5.00	268-1500	1	....	Se	I	CNS	1.75	1.43	1.62	1.31	.375	.375	.375	.375
28	Franklin 4CHO-150	T, Tr	4-3$\frac{5}{8}$x3$\frac{5}{8}$	....	43-3000	150.0	5.50	100-1200	1	....	Se	I	CNS	1.66	1.51	1.50	1.40	.375	.375	.375	.375
29	G. M. C. 228	T	6-3$\frac{9}{16}$x3$\frac{13}{16}$	30.4	78-3000	228.0	6.15	178-1000	6	N	In	I	Sil	1.64	1.47	1.25	1.16	.289	.307	.343	.343
30	G. M. C. 248	T	6-3$\frac{23}{32}$x3$\frac{13}{16}$	33.1	89-3000	248.5	6.15	195-1100	6	N	In	I	Sil	1.64	1.47	1.25	1.16	.289	.307	.343	.343
31	G. M. C. 278	T	6-3$\frac{5}{8}$x4$\frac{1}{2}$	31.5	100-2900	278.6	6.00	223-1200	6	N	Se	I	CHS	1.81	1.56	1.44	1.37	.333	.333	.375	.375
32	G. M. C. 308	T, B	6-3$\frac{13}{16}$x4$\frac{1}{2}$	33.9	110-2800	308.2	6.00	240-1200	6	N	Se	I	CHS	1.81	1.56	1.44	1.37	.333	.333	.375	.375
33	G. M. C. 361	T	6-4$\frac{1}{8}$x4$\frac{1}{2}$	40.8	122-2800	360.8	6.00	278-800	6	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
34	G. M. C. 426	T	6-4$\frac{1}{4}$x5	43.3	145-2700	425.6	6.00	340-1100	6	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
35	G. M. C. 451	T	6-4$\frac{3}{8}$x5	45.9	149-2600	450.9	6.00	368-1200	6	N	Se	I	CHS	1.94	1.72	1.50	1.50	.406	.406	.375	.375
36	G. M. C. 479	B	6-4$\frac{5}{8}$x4$\frac{3}{4}$	51.3	141-2600	478.8	5.50	360-800	6	N	Se	I	CHS	2.12	1.94	1.65	1.62	.406	.406	.375	.375
37	G. M. C. 529	B	6-4$\frac{5}{8}$x5$\frac{1}{4}$	51.3	159-2500	529.2	5.50	405-1200	6	N	Se	I	CHS	2.12	1.94	1.65	1.62	.406	.406	.437	.437
38	G. M. C. 707	B	6-5x6	60.0	175-2100	706.8	4.83	540-1200	6	D	Se	I	CHS	2.44	2.17	1.75	1.75	.413	.413	.437	.500
39	Gray Light Four	M	4-2$\frac{1}{2}$x3$\frac{1}{2}$	....	16-1800	69.0	5.50	....	4	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.314	.312
40	Gray Sea Scout	M	4-2$\frac{7}{8}$x3$\frac{1}{2}$	....	37-3000	91.0	6.50	....	4	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.341	.312
41	Gray Four-22	M	4-	....	45-3000	112.0	6.50	....	4	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.341	.312
42	Gray Phantom 4-45	M	4-2$\frac{7}{8}$x3$\frac{1}{2}$	....	45-3600	91.0	7.50	....	4	N	In	L	Sil	1.20	1.01	1.06	.875	.291	.292	.341	.312
43	Gray Four-40	M	4-3$\frac{3}{16}$x4$\frac{3}{8}$	....	55-3000	140.0	5.50	....	4	N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.341	.339
44	Gray Four-52	M	4-3$\frac{7}{16}$x4$\frac{3}{8}$	....	57-2600	162.0	6.00	....	4	N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.341	.341
45	Gray Phantom 4-62	M	4-3$\frac{3}{16}$x4$\frac{3}{8}$	....	62-3600	140.0	7.20	....	4	N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.341	.339
46	Gray Phantom 4-75	M	4-3$\frac{7}{16}$x4$\frac{3}{8}$	....	75-3600	162.0	7.00	....	4	N	In	L	Sil	1.51	1.32	1.37	1.18	.331	.331	.341	.339
47	Gray Six-51	M	6-3$\frac{1}{4}$x4	....	73-3200	200.0	6.00	....	6	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
48	Gray Six-71	M	6-3$\frac{1}{4}$x4$\frac{3}{8}$	....	84-3000	218.0	6.50	....	6	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
49	Gray Phantom 6-90	M	6-3$\frac{1}{4}$x4$\frac{3}{8}$	....	90-3600	218.0	7.00	....	6	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
50	Gray Phantom 6-103	M	6-3$\frac{1}{4}$x4$\frac{3}{8}$	....	103-3600	218.0	7.00	....	6	N	In	L	Sil	1.51	1.32	1.37	1.18	.284	.284	.341	.339
51	Gray Six-91	M	6-3$\frac{7}{16}$x4$\frac{3}{8}$	....	100-3000	244.0	7.00	....	6	N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.339	.338
52	Gray Phantom 6-125	M	6-3$\frac{7}{16}$x4$\frac{3}{8}$	....	125-3600	244.0	7.00	....	6	N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.399	.338
53	Gray Fireball 6-140	M	6-3$\frac{7}{16}$x4$\frac{3}{8}$	....	140-4000	244.0	7.50	....	6	N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.399	.338
54	Gray Fireball 6-150	M	6-3$\frac{7}{16}$x4$\frac{3}{8}$	....	150-4000	244.0	7.50	....	6	N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.399	.338
55	Gray Fireball 6-160	M	6-3$\frac{7}{16}$x4$\frac{3}{8}$	....	160-4000	244.0	7.50	....	6	N	In	L	Sil	1.57	1.42	1.43	1.31	.311	.311	.339	.338
56	Gray Fireball 225	M	6-3.30x4$\frac{3}{8}$	....	180-5000	225.0	10.00	....	6	N	In	L	Sil	1.71	1.58	1.56	1.43	.360	.360	.340	.371
57	Gray Six-101	M	6-3$\frac{3}{4}$x4$\frac{3}{8}$	....	110-3200	290.0	6.50	....	6	N	In	L	Sil	1.78	1.51	1.62	1.37	.354	.354	.404	.402
58	Gray Six-121	M	6-4x4$\frac{3}{8}$	....	124-3200	330.0	6.50	....	6	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
59	Gray Super Six	M	6-4x4$\frac{3}{8}$	....	145-3200	330.0	6.50	....	6	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.404	.402
60	Gray Six-105	M	6-4$\frac{1}{4}$x4$\frac{1}{2}$	....	101-2400	383.0	5.50	....	6	N	In	L	Sil	2.06	1.87	1.81	1.62	.406	.406	.434	.432
61	Gray Eight-160	M	8-3$\frac{5}{8}$x4$\frac{1}{2}$	....	160-3200	372.0	6.25	....	8	N	In	L	Sil	1.56	1.42	1.50	1.37	.372	.372	.339	.338
62	Gray Phantom 8-175	M	8-3$\frac{5}{8}$x4$\frac{1}{2}$	....	175-3600	372.0	6.62	....	8	N	In	L	Sil	1.56	1.42	1.50	1.37	.372	.372	.339	.338
63	Hall-Scott 165	T, B, Ind	4-4$\frac{1}{4}$x5$\frac{1}{2}$	28.9	72-2000	312.0	4.80	212-1000	4	N	Se	I	Spec	2.13	2.25	1.93	1.89	.343	.343	.435	.435
64	Hall-Scott Fisher Jr. 178-179	M	4-4$\frac{1}{4}$x5$\frac{1}{2}$	....	70-1800	312.0	4.03	213-1300	4	N	Se	I	Sil	2.13	2.13	1.93	1.93	.343	.343	.435	.435
65	Hall-Scott 167	T, B, Ind	4-4$\frac{3}{4}$x5$\frac{1}{2}$	36.1	80-2000	390.0	4.84	265-1000	4	N	Se	I	Spec	2.25	2.38	2.06	2.03	.343	.343	.435	.435
66	Hall-Scott (H)95	T, B	6-4x5	38.4	95-2400	377.0	5.40	255-1000	6	W	In	I	AESW	2.03	1.91	1.87	1.65	.421	.421	.435	.434
67	Hall-Scott 147	T, B	6-4x5	38.4	93-2200	377.0	4.90	247-1000	6	N	Se	I	Sil	2.13	2.13	1.92	1.92	.312	.312	.435	.435
68	Hall-Scott (H)130	T, B	6-4$\frac{1}{4}$x5	43.3	124-2800	425.6	4.96	310-1000	6	W	In	I	AESW	2.28	2.16	2.12	1.90	.421	.421	.435	.435
69	Hall-Scott Navigator I, 116-117	M	6-4$\frac{1}{4}$x5$\frac{1}{2}$	....	103-1800	468.0	4.74	333-1200	6	N	Se	I	Spec	2.25	2.25	1.93	1.93	.312	.312	.435	.435
70	Hall-Scott 160	T, B	6-4$\frac{1}{4}$x5$\frac{1}{2}$	43.3	117-2200	468.0	4.42	324-1200	6	N	Se	I	Spec	2.25	2.38	2.06	2.06	.343	.343	.435	.435
71	Hall-Scott 160-1	T, B	6-4$\frac{1}{4}$x5$\frac{1}{2}$	43.3	108-2200	468.0	4.70	310-1200	6	N	Se	I	Spec	2.13	2.13	1.92	1.92	.312	.312	.435	.435
72	Hall-Scott Navigator II, 163-164	M	6-4$\frac{1}{4}$x5$\frac{1}{2}$	....	107-2000	468.0	4.43	319-1200	6	N	Se	I	AESW	2.25	2.38	2.04	2.04	.328	.328	.435	.435
73	Hall-Scott (H)135	T, B	6-4$\frac{1}{2}$x5	48.6	140-2800	477.1	5.03	330-1200	6	W	In	I	AESW	2.28	2.16	2.12	1.90	.421	.421	.435	.434
74	Hall-Scott Explorer 132-33, 157-58	M	6-5x7	....	190-1800	824.7	4.85	593-1400	6	N	Se	I	AESW	2.73	2.73	2.50	2.50	.435	.435	.406	.406
75	Hall-Scott 175-1	T, B, FA	6-5x6	60.0	186-2000	706.8	5.00	570-1000	6	N	Se	I	AESW	2.50	2.50	2.31	2.31	.406	.343	.435	.435
76	Hall-Scott (H)180	T, B	6-5x6	60.0	181-2100	706.8	4.90	492-1200	6	W	In	I	AESW	2.62	2.37	2.37	1.99	.482	.482	.497	.528
77	Hall-Scott 176	T, B, FA	6-5$\frac{1}{4}$x6	66.1	191-1800	779.3	5.02	630-1000	6	N	Se	I	AESW	2.50	2.50	2.31	2.31	.406	.343	.435	.435
78	Hall-Scott (H)190	T, B, RC	6-5$\frac{1}{4}$x6	66.1	200-2000	779.3	5.00	570-1200	6	W	In	I	AESW	2.87	2.62	2.62	2.24	.482	.497	.497	.458
79	Hall-Scott 177	T, B, FA	6-5$\frac{1}{2}$x6	72.6	203-1800	855.2	5.00	690-1100	6	N	Se	I	AESW	2.50	2.50	2.31	2.31	.406	.343	.435	.435
80	Hall-Scott Invader 168-169	M	6-5$\frac{1}{2}$x7	....	265-2100	997.8	4.95	754-1400	6	N	In	I	AESW	2.87	2.87	2.62	2.62	.482	.482	.497	.528
81	Hall-Scott 230-231	M, Ind	6-5$\frac{1}{2}$x7	72.6	245-1800	997.8	4.90	745-1400	6	N	In	I	AESW	2.73	2.73	2.50	2.50	.406	.406	.435	.435
82	Hall-Scott Defender 1268-1269	M	12-5$\frac{1}{2}$x7	....	575-2100	1996.0	5.80	....	6	N	Se	I	Sil	2.87	2.75	2.62	2.50	.482	.482	.500	.531
83	Hall-Scott Defender 2268-2269	M	12-5$\frac{3}{4}$x7	....	630-2100	2181.0	7.00	....	6	N	Se	I	Sil	2.87	2.75	2.62	2.50	.482	.482	.500	.531
84	Hall-Scott Defender 2286-2287	M	12-5$\frac{3}{4}$x7	....	605-2100	2181.0	7.00	....	6	N	Se	I	Sil	2.87	2.75	2.62	2.50	.482	.482	.500	.531
85	Hercules BXB	Ind	2-2$\frac{7}{8}$x3	6.6	10-2300	39.0	6.00	28-1250	2	N	In	L	Sil	1.23	1.10	1.00	.875	.200	.200	.248	.248
86	Hercules NXA	M	2-3x4	7.2	13-2000	56.5	5.50	39-1100	2	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.312	.312
87	Hercules NXB	M, Tr, Ind	2-3$\frac{1}{4}$x4	8.9	16-2000	66.3	5.50	46-1100	2	N	In	L	CNS	1.48	1.35	1.25	1.25	.250	.250	.312	.312
88	Hercules ZXA	T, Tr, Ind	4-2$\frac{1}{2}$x3	10.0	23-3800	58.8	6.10	40-2000	4	N	In	L	Sil	1.23	1.10	1.00	1.00	.200	.200	.248	.248
89	Hercules ZXB	T, Tr, Ind	4-2$\frac{5}{8}$x3	11.0	25-3800	64.9	6.10	....	4	N	In	L	Sil	1.23	1.10	1.00	.875	.200	.200	.248	.248
90	Hercules IX-3	Tr, Ind	4-2$\frac{1}{2}$x4	10.0	28-3200	78.0	5.20	55-2000	4	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
91	Hercules IX-5	T, Tr, Ind	4-2$\frac{1}{2}$x4	10.0	28-3200	78.0	5.20	55-2000	4	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
92	Hercules IXA-3	Tr, Ind	4-3x4	14.4	40-3200	113.0	5.50	79-2000	4	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
93	Hercules IXA-5	T,Tr,M,Ind	4-3x4	14.4	40-3200	113.0	5.50	79-2000	4	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
94	Hercules IXB-3	Tr, Ind	4-3$\frac{1}{4}$x4	16.9	47-3200	133.0	5.20	92-2000	4	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
95	Hercules IXB-5	T,Tr,M,Ind	4-3$\frac{1}{4}$x4	16.9	47-3200	133.0	5.20	92-2000	4	N	In	L	CNS	1.48	1.35	1.25	1.12	.250	.250	.310	.310
96	Hercules OOA	T,Tr,M,Ind	4-3$\frac{1}{2}$x4$\frac{1}{2}$	19.6	35-2000	173.2	4.20	107-1200	4	N	In	L	CNS	1.75	1.62	1.50	1.37	.326	.326	.373	.373
97	Hercules OOB	T,B,Tr,M,Ind	4-3$\frac{3}{4}$x4$\frac{1}{2}$	22.5	38-2000	198.8	4.20	125-1000	4	N	In	L	CNS	1.75	1.62	1.50	1.37	.326	.326	.373	.373
98	Hercules OOC	T,B,Tr,M,Ind	4-4x4$\frac{1}{2}$	25.6	41-2000	226.2	4.20	143-1000	4	N	In	L	CNS	1.75	1.62	1.50	1.37	.326	.326	.373	.373
99	Hercules OX	Tr, Ind	4-4x5	25.6	46-1800	251.3	4.30	155-1000	4	N	In	L	CNS	1.87	1.87	1.62	1.62	.326	.326	.373	.373

(For abbreviations see pages 214-215)

Commercial Vehicle Engines—*Continued*

Valves: Angle (Deg.)	Valves: Seats: Inserts Used?	Valves: Seats: Insert Material (S.A.E. No.)	Front End Drive—Type	Pistons: Material	Pistons: Length (In.)	Pistons: Weight with Pins, Rings Bushings (Oz.)	Pistons: Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Connecting Rods: Material	Connecting Rods: Center to Center Length (In.)	Connecting Rods: Weight with Bushing and Cap (Oz.)	Crankshaft: Material	Crankshaft: Counterbalance Used?	Crankshaft: Crank-Pin: Diameter and Length (In.)	Crankshaft: Main Bearings: Number	Crankshaft: Main Bearings: Diameter and Length (In.): Front	Crankshaft: Main Bearings: Diameter and Length (In.): Rear	Oil Pressure To—	Spark Plug—Thread Size	Carburetor: Make	Carburetor: Size	Engine Weight without Carburetor or Ignition (Lb.)	Overall Dimensions (In.): Width	Overall Dimensions (In.): Height	Overall Dimensions (In.): Length	Line Number
(h)	E	WA	Ch	CT	3.56	....	.859x2.68	4	CS	7	....	CS	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	......	1¼	506	28	27¼	36 11/32	1
(h)	E	WA	Ch	CT	3.56	....	.859x2.68	4	CS	7	....	CS	Y	1.93x1.31	4	2.25x1.21	2.25x1.81	abcet	18 mm	......	1¼	512	28	27¼	36 11/32	2
(h)	E	HS	Ch	A1	3.93	....	.859x2.87	4	CS	8⅜	....	CS	Y	2.12x1.37	4	2.37x1.43	2.37x2.06	abce	18 mm	......	1½	548	....	....	....	3
(h)	E	WA	HG	CT	4.75	....	1.10x3.06	4	CS	8⅜	....	CS	Y	2.25x1.56	7	2.62x1.56	2.62x2.18	abcet	18 mm	......	1½	750	25¾	29½	42	4
(h)	E	WA	HG	CT	4.75	....	1.10x3.18	4	CS	8⅜	....	CS	Y	2.25x1.56	7	2.62x1.56	2.62x2.18	abcet	18 mm	......	1½	760	25¾	29½	42	5
(h)	E	WA	HG	CT	4.75	....	1.10x3.43	4	CS	8⅜	....	CS	Y	2.25x1.56	7	2.62x1.56	2.62x2.18	abcet	18 mm	......	1½	770	25¾	29½	42	6
30	E	HS	HG	CT	5.31	....	1.25x3.09	4	CS	9	....	CS	Y	2.37x1.81	7	2.62x1.65	2.62x2.65	abcef	18 mm	......	1½	925	25¾	32 7/32	44 11/16	7
30	E	HS	HG	CT	5.31	....	1.25x3.09	4	CS	9	....	CS	Y	2.37x1.81	7	2.62x1.65	2.62x2.65	abcef	18 mm	......	1½	932	25¾	32 7/32	44 11/16	8
30	E	HS	HG	CT	5.31	....	1.25x3.43	5	CS	9	....	CS	Y	2.37x1.81	7	2.62x1.65	2.62x2.65	abcef	18 mm	......	1½	938	25¾	32 7/32	44 11/16	9
30	E	HS	HG	CT	5.31	....	1.25x3.43	4	CS	9	....	CS	Y	2.37x1.81	7	2.62x1.65	2.62x2.65	abcef	18 mm	......	1¾	951	25¾	32 7/32	44 11/16	10
30	E	HS	Ch	Al	5.31	....	1.25x3.43	4	CS	9½	....	4140	N	2.50x1.81	7	2.75x1.75	2.75x2.81	abcefg	18 mm	......	1¾	1298	25¾	36 35/64	46 31/32	11
30	E	HS	Ch	Al	5.31	....	1.25x3.68	4	CS	9½	....	4140	N	2.50x1.81	7	2.75x1.75	2.75x2.81	abcefg	18 mm	......	1¾	1318	25¾	36 25/32	46 31/32	12
30	E	HS	Ch	Al	5.31	....	1.50x3.71	4	CS	10½	....	CV	Y	2.75x1.81	7	2.75x1.75	2.75x2.81	abcefg	18 mm	......	2	1430	25¾	39⅝	46 31/32	13
45	E	SA	Ch	Alt	3.68	....	.859x2.62	4	MS	7 15/16	31	1040	Y	1.93x1.00	4	2.25x1.23	2.25x1.87	abce	14 mm	Car	1½	500	23¾	31 27/32	37 17/32	14
45	E	SA	Ch	Als	3.68	....	.859x2.75	4	MS	7 15/16	31	1040	Y	2.06x1.00	4	2.50x1.23	2.50x1.87	abce	14 mm	Str	1½	535	23¾	31 27/32	37 17/32	15
45	E	SA	Ch	Al	3.87	20	.859x2.87	4	MS	8	....	1040	Y	2.12x1.21	4	2.50x1.31	2.50x1.87	abce	14 mm	Car	1½	580	23¾	31 7/32	39 13/16	16
45	E	SA	Ch	Al	3.87	20	.859x2.87	4	MS	7⅞	35	1040	Y	2.12x1.21	4	2.50x1.31	2.50x1.87	abce	14 mm	Car	1½	600	23¾	31 7/32	39 13/16	17
45	E	SA	Ch	....	4.56	28	1.12x3.25	4	MS	10 7/16	56	1040	Y	2.31x1.43	7	3.00x1.87	3.00x3.04	abce	14 mm	Str	1½	1050	24¾	31½	49 13/32	18
45	N	.....	HG	Als	6.12	77	1.37x4.17	4	1040	12¾	132	CNS	Y	2.37x3.00	3	2.62x3.31	2.62x4.00	abcdeg	⅞-18	Zen	1½	1450	27	37 11/16	70 15/16	19
45	N	.....	HG	Als	6.12	77	1.37x4.17	4	1040	12¾	132	CNS	Y	2.37x3.00	4	2.62x3.31	2.62x4.00	abcdeg	⅞-18	Zen(2)	1½	1900	27	37 11/16	87 5/16	20
45	Bo	CNT	HG	CAS	....	11	.687x2.36	3	MS	6⅛	10	CAS	Y	1.70x1.41	3	2.10x1.50	2.10x2.00	abce	14 mm	Own	.78	310	.....	.....	.....	21
45	Bo	CNT	HG	CAS	....	16	.750x2.84	3	MS	7	17	CAS	Y	2.00x1.75	3	2.50x1.37	2.50x1.97	abce	14 mm	Own	.94	485	.....	.....	.....	22
45	Bo	CNT	HG	CAS	....	17	.750x2.84	3	MS	7	18	CAS	Y	2.14x1.75	3	2.50x1.37	2.50x1.97	abce	14 mm	Own	.94	495	.....	.....	.....	23
30	....	.....	HG	Al	4.37	36	1.25x3.12	5	AS	9½	54	CS	....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdefg	18 mm	Zen	1½	1247	40⅛	27¾	44	24
30	....	.....	HG	Al	4.37	36	1.25x3.12	5	AS	9½	54	CS	....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdeg	18 mm	Zen	1½	1087	24½	37 1/16	44	25
30	....	.....	HG	Al	4.37	38	1.25x3.12	5	AS	9½	54	CS	....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdefg	18 mm	Zen	1½	1247	40⅛	27¾	44	26
30	....	.....	HG	Al	4.37	38	1.25x3.12	5	AS	9½	54	CS	....	2.37x1.75	7	2.70x2.25	2.70x2.87	abcdeg	18 mm	Zen	1½	1087	24½	37 1/16	44	27
30	....	.....	HG	Al	3.21	18	.859x3.12	5	AS	7	74	CS	Y	1.93x1.00	3	2.25x1.25	2.25x1.50	ace	14 mm	Op	1-1⅛	315	34	18½	18	28
30	....	.....	HG	Al	4.20	33	.990x3.08	4	1040A	7	33	1050	Y	2.31x1.23	4	2.69x1.19	2.78x1.47	abcdeg	14 mm	Zen	1⅜	......	21 13/16	26 5/16	40¾	29
30	E	WR	HG	Al	4.16	34	.990x3.25	4	1040A	7	33	1050	Y	2.31x1.23	4	2.69x1.19	2.78x1.47	abcdeg	14 mm	Zen	1⅜	......	21 13/16	26 5/16	40¾	30
45	E	WR	HG	Al	4.39	37	1.00x3.18	4	1040A	9¾	51	1050	Y	2.37x1.34	7	2.75x2.09	2.75x2.09	abcdeg	14 mm	Zen	1⅜	......	25¼	31 29/64	45 1/32	31
45	E	WR	HG	Al	4.39	40	1.00x3.36	4	1040A	9¾	51	1050	Y	2.37x1.34	7	2.75x2.09	2.75x2.09	abcdeg	14 mm	Zen	1⅜	......	25¼	31 29/64	45 1/32	32
(h)	E	St	HG	Al	5.39	59	1.25x3.59	4	1040A	10¾	73	1050	Y	2.62x1.47	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1½	......	22½	35 3/16	47 11/16	33
(h)	E	St	HG	Al	5.14	60	1.25x3.71	4	1040A	10¾	73	1050	Y	2.62x1.47	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1½	......	22½	35 3/16	47 11/16	34
(h)	E	St	HG	Al	5.14	63	1.25x3.84	4	1040A	10¾	73	1050	Y	2.62x1.47	7	3.00x2.22	3.00x2.22	abcdeg	14 mm	Zen	1¾	......	22½	35 3/16	47 11/16	35
30	E	St	HG	Al	5.25	66	1.25x4.06	4	1040A	9½	81	1050	Y	2.62x1.72	7	3.50x2.50	3.50x2.50	abcdeg	14 mm	Zen	2	......	.....	.....	.....	36
30	E	St	HG	Al	5.25	66	1.25x4.06	4	1040A	10½	82	1050	Y	2.62x1.72	7	3.50x2.50	3.50x2.50	abcdeg	14 mm	Zen	2	......	.....	.....	.....	37
30	E	St	HG	Al	5.03	77	1.37x4.47	5	4140A	12⅛	77	4140	Y	2.75x2.06	7	3.00x1.72	3.00x2.50	abcdeg	18 mm	Str	2	......	.....	.....	.....	38
(h)	N	.....	HG	Cl	2.87	16	.703x2.06	3	CS	5¾	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abe	14 mm	Zen	¾	330§	16¼	17½	30	39
(h)	N	.....	HG	Cl	2.87	21	.703x2.43	3	CS	5¾	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	1	375§	15	18⅝	30⅝	40
(h)	N	.....	HG	Cl	2.87	....	.709x2.68	3	CS	5¾	17	1045	N	1.50x1.18	3	1.75x1.66	1.75x1.28	abce	14 mm	Zen	1	410§	15	18⅝	31⅝	41
(h)	N	.....	HG	Al	2.87	16	.703x2.43	3	CS	5¾	17	1045	N	1.50x1.18	3	1.75x1.78	1.75x1.37	abce	14 mm	Zen	1⅜	340§	17⅜	18½	30	42
(h)	N	.....	HG	Al	3.56	20	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	510§	18 1/16	23½	34⅛	43
(h)	N	.....	HG	Al	3.56	24	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	540§	18 1/16	23½	35⅛	44
(h)	N	.....	HG	Al	3.56	20	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	435§	20¼	21⅞	33	45
(h)	N	.....	HG	Al	3.56	24	.859x2.68	4	CS	7	32	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	abce	18 mm	Zen	1¼	460§	20¼	21⅞	33	46
(h)	N	.....	HG	Cl	3.75	29	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1¼	650§	18½	23	41	47
(h)	N	.....	HG	Al	3.56	20	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1½	665§	18½	23	42	48
(h)	N	.....	HG	Al	3.56	20	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1½	625§	23	22	39⅞	49
(h)	N	.....	HG	Al	3.56	20	.859x2.68	4	CS	7	32	1045	Y	1.93x1.31	4	2.25x1.81	2.25x1.21	abce	18 mm	Zen	1¼	630§	23	22	39⅞	50
(h)	N	.....	Ch	Al	3.97	28	.859x2.87	4	CS	8⅜	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Zen	1½	799§	19⅞	23⅞	49½	51
(h)	N	.....	HG	Al	3.97	28	.859x2.87	4	CS	8⅜	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Str	1½	730§	22½	30	43½	52
(h)	N	.....	HG	Al	3.97	28	.859x2.87	4	CS	8⅜	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Str	1½	730§	22½	30	42¾	53
(h)	N	.....	HG	Al	3.97	28	.859x2.87	4	CS	8⅜	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Str	1½	730§	22½	30	42¾	54
(h)	N	.....	HG	Al	3.97	28	.859x2.87	4	CS	8⅜	34	1045	Y	2.12x1.37	4	2.37x2.06	2.37x1.43	abce	18 mm	Zen	....	730§	30¾	32½	42¾	55
45	N	.....	HG	Al	3.97	25	.874x2.92	4	CS	8⅜	32	1045	Y	2.12x1.37	4	2.39x1.91	2.39x1.50	abce	18 mm	Zen	1½	595	28⅝	23	38⅞	56
(h)	N	.....	HG	Al	4.75	40	1.10x3.18	4	CS	8⅜	47	1045	Y	2.25x1.56	7	2.62x2.15	2.62x1.56	abce	18 mm	Str	1½	985§	23 11/16	26	49⅝	57
(h)	N	.....	HG	Al	4.75	45	1.10x3.43	4	CS	8⅜	47	1045	Y	2.25x1.56	7	2.62x2.15	2.62x1.56	abce	18 mm	Str	1¾	1015§	23 11/16	26	49⅝	58
(h)	N	.....	HG	Al	4.75	45	1.10x3.43	4	CS	8⅜	47	1045	Y	2.25x1.56	7	2.62x2.15	2.62x1.56	abce	18 mm	Str	1½	990§	23 11/16	26	49	59
(h)	E	.....	HG	Cl	5.31	74	1.25x3.43	4	CS	9	60	1045	Y	2.37x1.81	7	2.62x2.65	2.62x1.65	abce	18 mm	Str	1½	1250§	22	29⅛	55⅝	60
(h)	N	.....	HG	Al	3.94	30	1.11x3.05	4	CS	9	49	1045	Y	2.25x1.50	5	2.62x2.53	2.62x1.65	abce	18 mm	Str	1½	1275§	25¾	28	59⅛	61
(h)	N	.....	HG	Al	3.94	30	1.11x3.05	4	CS	9	49	1045	Y	2.25x1.50	5	2.62x2.53	2.62x1.65	abce	18 mm	Str	1½	1250§	25¾	28	54⅞	62
45	....	.....	HC	Al	5.21	57	1.25x3.25	6	AS	11	105	CNS	N	2.25x2.00	3	2.75x2.31	2.75x3.31	abcefg	⅞-18	Zen	1½	1135§	27 7/16	40½	46 11/16	63
45	....	.....	HC	Al	5.03	57	1.25x3.25	6	AS	11	103	CNS	N	2.25x2.00	3	2.75x2.31	2.75x2.31	abcefg	18 mm	Zen	1¾	1905§	24⅝	41⅜	76 7/16	64
45	....	.....	HC	Al	5.20	74	1.25x3.75	6	AS	11	100	CNS	N	2.37x2.00	3	3.00x2.31	3.00x2.31	abcefg	⅞-18	Zen	1½	1160§	27⅛	40¾	49⅝	65
30	....	.....	Ch	Al	5.09	40	1.25x3.50	4	AS	11	82	4140	N	2.62x1.75	7	3.00x1.50	3.00x2.25	abcefg	18 mm	Zen	1½	1173§	54¾	18 1/16	52⅞	66
45	....	.....	HC	Al	4.50	41	1.00x3.43	4	AS	11	75	4140	N	2.25x1.45	4	2.75x2.68	2.75x2.68	abcefg	18 mm	Zen	1½	1180§	25¾	38 15/16	49 1/16	67
30	....	.....	Ch	Al	5.40	52	1.12x3.73	4	AS	11	83	4140	Y	2.62x1.75	7	3.00x1.50	3.00x2.25	abcefg	18 mm	Zen	1¾	1252§	54¾	18 7/16	52⅞	68
45	....	.....	HC	Al	4.56	52	1.25x3.59	6	AS	11	104	4140	Y	2.25x2.00	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	2120§	23⅛	42	99 15/16	69
45	....	.....	HC	Al	5.26	60	1.25x3.34	5	AS	11	101	4140	Y	2.37x2.00	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	1407§	29 13/16	46⅛	57 7/16	70
45	....	.....	HC	Al	5.21	58	1.25x3.25	5	AS	11	102	4140	Y	2.37x2.00	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	1310§	31 7/32	49 9/16	55 7/16	71
45	....	.....	HC	Al	5.26	56	1.25x3.34	5	AS	11	101	4140	Y	2.37x2.00	4	2.75x2.18	2.75x3.18	abcefg	18 mm	Zen	1¾	2392§	28	42½	90	72
30	....	.....	Ch	Al	5.20	62	1.12x4.00	4	AS	11	83	3140	Y	2.62x1.75	7	3.00x1.50	3.00x2.25	abcefg	18 mm	Zen	1¾	1265§	54¾	18 7/16	52⅞	73
30	....	.....	Ch	Al	4.92	78	1.25x4.00	5	AS	11	97	4140	Y	2.37x2.00	7	2.75x2.43	2.75x4.56	abcefg	18 mm	Zen	2	2820§	31½	42	90 3/16	74
(h)	....	.....	HC	Al	6.31	97	1.37x4.18	5	AS	11	113	4140	Y	2.50x2.00	7	3.25x1.43	3.25x2.43	abcefg	18 mm	Zen	2	1830§	32 13/16	44 15/16	59⅞	75
30	....	.....	Ch	Al	6.17	77	1.37x4.18	4	AS	11	103	4140	Y	2.75x2.00	7	3.25x2.18	3.25x2.56	abcefg	18 mm	Zen	2	1960§	59 9/16	20 11/16	67 19/32	76
(h)	....	.....	HC	Al	6.18	104	1.37x4.44	5	AS	11	113	4140	Y	2.50x2.00	7	3.25x1.43	3.25x2.43	abcefg	18 mm	Zen	2	1830§	32 13/16	44 15/16	59⅞	77
30	....	.....	Ch	Al	6.18	104	1.37x4.43	4	AS	11	103	4140	Y	2.75x2.00	7	3.25x2.18	3.25x2.56	abcefg	18 mm	Zen	1¾	......	53½	22¼	67 19/32	78
(h)	....	.....	HC	Al	5.97	114	1.37x4.68	5	AS	11	113	4140	Y	2.50x2.00	7	3.25x1.43	3.25x2.43	abcefg	18 mm	Zen	2	1900§	13 13/16	44 15/16	59⅞	79
30	....	.....	Ch	Al	6.46	108	1.37x4.40	5	AS	11	114	4140	Y	2.37x2.00	7	2.75x2.43	2.75x4.56	abcefg	18 mm	Zen	2	2015§	25 1/32	39⅝	74 3/16	80
30	....	.....	Ch	Al	6.62	....	1.37x4.69	5	AS	11	97	4140	Y	2.37x2.00	7	2.75x2.43	2.75x4.56	abcefg	18 mm	Zen	2	......	31½	42	90 3/16	81
30	E	St	HC	Al	7.31	....	1.37x4.31	6	3140	12	......	4140	Y	3.00x2.43	7	3.25x2.09	3.25x3.09	abce	18 mm	Zen(3)	2½	3650§	45	42¾	88	82
30	E	St	HC	Al	7.31	....	1.37x4.31	6	3140	12	......	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	abce	18 mm	Zen(3)	2½	3650§	45	42¾	88	83
30	E	St	HC	Al	7.31	....	1.37x4.31	6	3140	12	......	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	abce	18 mm	Zen(3)	2½	4560§	45	50¼	98¼	84
30	N	.....	HG	Cl	2.68	17	.687x2.50	3	3140	5⅛	15	1045	Y	1.50x1.00	2	2.00x1.25	2.00x1.37	abe	14 mm	Op	⅝	131	14⅞	16¼	18 13/16	85
30	N	.....	HG	Cl	3.06	28	.750x2.56	3	3140	6 9/16	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	abe	⅞-18	Op	Op	270	15¼	18½	18⅝	86
30	N	.....	HG	Cl	3.06	29	.750x2.81	3	3140	6 9/16	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	abe	⅞-18	Op	Op	270	15¼	18½	18⅝	87
30	N	.....	HG	Cl	2.68	17	.687x2.18	3	3140	5⅛	15	1045	N	1.50x1.00	3	2.00x1.31	2.00x1.37	abe	14 mm	Op	Op	179	14¾	16 9/16	21 5/16	88
30	N	.....	HG	Cl	2.68	19	.687x2.18	3	3140	5⅛	15	1045	N	1.50x1.00	3	2.00x1.31	2.00x1.37	abe	14 mm	Op	Op	179	14¾	16 9/16	21 5/16	89
30	N	.....	HG	Cl	2.43	18	.750x2.18	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	18 mm	Op	Op	255	16⅝	18¾	24 3/16	90
30	N	.....	HG	Cl	2.43	18	.750x2.18	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	18 mm	Op	Op	250	16⅝	18¾	24 3/16	91
30	N	.....	HG	Cl	3.06	28	.750x2.56	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	⅞-18	Op	Op	285	16⅝	18¾	24 3/16	92
30	N	.....	HG	Cl	3.06	28	.750x2.56	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	⅞-18	Op	Op	283	16⅝	18¾	24 3/16	93
30	N	.....	HG	Cl	3.06	29	.750x2.81	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	⅞-18	Op	Op	293	16⅝	18¾	24 3/16	94
30	N	.....	HG	Cl	3.06	29	.750x2.81	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abe	⅞-18	Op	Op	291	16⅝	18¾	24 3/16	95
45	N	.....	HG	Cl	4.31	49	1.00x3.12	4	1035	8	37	1045	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	⅞-18	Op	....	460	17½	23¼	29⅞	96
45	N	.....	HG	Cl	4.12	56	1.00x3.37	4	1035	8	37	1045	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	⅞-18	Op	Op	460	17½	23¼	29⅞	97
45	N	.....	HG	Cl	4.31	56	1.00x3.62	4	1035	8	37	1045	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	⅞-18	Op	Op	460	17½	23¼	29⅞	98
45	E	.....	HG	Cl	4.87	67	1.37x3.50	4	1035	9½	58	1045	N	2.00x2.25	3	2.00x3.18	2.00x3.31	abe	⅞-18	Op	1¼	655	20 17/32	28 7/32	36 5/32	99

(For abbreviations see pages 214-215)

American Stock, Marine and

Line Number	MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated Hp. (A.M.A.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio - to 1	Maximum Torque at R.P.M. (Lb. Ft.)	CYLINDERS: No. Cast in One Piece	CYLINDERS: Liners—Type	Crankcase—Upper Half Integral with Cylinders?	VALVES: Arrangement	VALVES: Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.): Intake	Max. Head Diameter (In.): Exhaust	Min. Port Diameter (In.): Intake	Min. Port Diameter (In.): Exhaust	Lift (In.): Intake	Lift (In.): Exhaust	Stem Diameter (In.): Intake	Stem Diameter (In.): Exhaust
1	Hercules ... OXC	Tr, Ind	4-4¼x5	28.9	56-1800	283.5	4.30	185-1000	4	N	In	L	CNS	1.87	1.87	1.62	1.62	.326	.326	.373	.373
2	Hercules ... K	T, Tr, Ind	4-4¼x5¾	28.9	55-1600	326.3	3.89	202-1000	4	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
3	Hercules ... L	Tr, Tr, Ind	4-4½x5¾	32.4	59-1600	365.8	3.78	226-1000	4	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
4	Hercules ... G	T, Tr, Ind	4-4¾x5¾	36.1	63-1600	407.6	3.89	250-1000	4	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
5	Hercules ... E	T, Tr, Ind	4-5x5¾	40.0	74-1600	451.4	4.00	288-1000	4	N	In	L	Sil	2.25	2.25	2.00	2.00	.326	.326	.434	.434
6	Hercules ... TX	Ind	4-5½x7	48.4	88-1200	665.0	3.84	425-800	4	N	In	L	Sil	2.90	2.90	2.50	2.50	.375	.375	.497	.497
7	Hercules ... TXA	Ind	4-6x7	57.6	98-1200	792.0	3.84	485-800	4	N	In	L	Sil	2.90	2.90	2.50	2.50	.375	.375	.497	.497
8	Hercules ... TXO	Ind	4-6⅜x7	65.0	112-1200	894.0	3.84	566-800	4	N	In	L	Sil	2.90	2.90	2.50	2.50	.375	.375	.497	.497
9	Hercules ... QXA-3	T, B, Tr	6-3¼x4⅛	23.4	29-3000	190.0	5.50	130-1300	6	N	In	L	CNS	1.50	1.37	1.31	1.12	.281	.281	.310	.310
10	Hercules ... QXA-5	T, B, Tr	6-3¼x4⅛	23.4	59-3000	190.0	5.50	130-1000	6	N	In	L	CNS	1.50	1.37	1.31	1.12	.281	.281	.310	.310
11	Hercules ... QXV-3	T, B, Tr	6-3¼x4⅛	25.3	65-3500	205.0	5.85	143-1000	6	N	In	L	CNS	1.50	1.37	1.31	1.12	.281	.281	.310	.310
12	Hercules ... QXB-5	T,B,Tr,M,Ind	6-3¼x4⅛	25.3	65-3500	205.0	5.85	143-1000	6	N	In	L	CNS	1.50	1.37	1.31	1.12	.281	.281	.310	.310
13	Hercules ... QXC-3	T, B, Tr	6-3⅜x4⅛	27.3	70-3500	221.0	5.85	154-1000	6	N	In	L	CNS	1.62	1.37	1.43	1.12	.281	.281	.310	.310
14	Hercules ... QXC-5	T,B,Tr,M,Ind	6-3⅜x4⅛	27.3	70-3500	221.0	5.85	154-1000	6	N	In	L	CNS	1.62	1.37	1.43	1.12	.281	.281	.310	.310
15	Hercules ... JXA	T,B,Tr,Ind	6-3⅜x4¼	27.3	63-2800	228.0	5.16	141-1000	6	N	In	L	CNS	1.75	1.62	1.50	1.37	.322	.322	.373	.373
16	Hercules ... JXB	T,B,Tr,M,Ind	6-3⅝x4¼	31.5	68-2800	263.0	5.40	163-1000	6	N	In	L	CNS	1.75	1.62	1.50	1.50	.322	.322	.373	.373
17	Hercules ... JXC	T,B,Tr,M,Ind	6-3¾x4¼	33.7	73-2800	282.0	5.35	175-1000	6	N	In	L	CNS	1.75	1.62	1.50	1.37	.322	.322	.373	.373
18	Hercules ... JXD	T,B,Tr,M,Ind	6-4x4¼	38.4	84-2800	320.0	5.63	204-1000	6	N	In	L	CNS	1.75	1.62	1.50	1.37	.322	.322	.373	.373
19	Hercules ... WXC	T,B,Tr,Ind	6-4x4½	38.4	90-2400	339.0	5.00	212-1000	6	N	In	L	Sil	1.75	1.75	1.62	1.50	.356	.356	.373	.373
20	Hercules ... WXC-2	T,B,Tr,Ind	6-4⅛x4½	40.3	95-2400	360.8	5.00	233-1000	6	N	In	L	Sil	1.75	1.75	1.62	1.50	.356	.356	.373	.373
21	Hercules ... WXC-3	T,B,Tr,Ind	6-4¼x4½	43.3	101-2400	383.0	5.00	262-1000	6	N	In	L	Sil	1.75	1.75	1.62	1.50	.356	.356	.373	.373
22	Hercules ... WXLC	T,B,Tr,M,Ind	6-4x4¾	38.4	104-2800	358.0	5.42	260-950	6	N	In	L	Sil	1.75	1.75	1.62	1.50	.356	.356	.373	.373
23	Hercules ... WXLC-3	T,B,Tr,M,Ind	6-4¼x4¾	43.3	118-2800	404.0	5.30	294-950	6	N	In	L	Sil	1.75	1.75	1.62	1.50	.356	.356	.373	.373
24	Hercules ... YXC	T,B,Tr,Ind	6-4⅜x4¾	45.9	94-2200	428.4	4.40	281-800	6	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
25	Hercules ... YXC-2	T,B,Tr,Ind	6-4½x4¾	48.6	98-2200	453.0	4.77	300-800	6	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
26	Hercules ... YXC-3	T,B,Tr,Ind	6-4⅝x4¾	51.3	104-2200	478.8	4.40	320-800	6	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
27	Hercules ... RXB	T,B,Tr,Ind	6-4½x5¼	48.6	110-2200	500.9	4.95	330-1000	6	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
28	Hercules ... RXC	T,B,Tr,Ind	6-4⅝x5¼	51.3	114-2200	529.2	4.95	350-1000	6	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
29	Hercules ... RXLC	T,B,Tr,Ind	6-4⅝x5¼	51.3	135-2200	529.2	5.40	388-1000	6	N	In	L	Sil	2.00	2.00	1.75	1.75	.388	.388	.373	.373
30	Hercules ... RXLD	T,B,Tr,Ind	6-4¾x5¼	54.2	142-2200	558.0	5.40	407-1000	6	N	In	L	Sil	2.00	2.00	1.81	1.75	.388	.388	.373	.373
31	Hercules ... HXB	T,B,Tr,Ind	6-5x6	60.0	148-2000	707.0	4.50	455-900	3	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
32	Hercules ... HXC	T,B,Tr,Ind	6-5¼x6	66.2	164-2000	779.0	4.50	505-900	3	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
33	Hercules ... HXD	T,B,Tr,Ind	6-5½x6	72.8	180-2000	855.0	4.50	555-900	3	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
34	Hercules ... HXE	T,B,Tr,Ind	6-5¾x6	79.4	198-2000	935.0	4.50	612-900	3	N	Se	L	Sil	2.43	2.31	2.12	2.00	.468	.468	.498	.498
35	Hudson ... 40-C	C, T	6-3x4⅛	21.6	92-4000	175.0	7.00	138-1400	6	N	In	L	Sil	1.37	1.37	1.26	1.23	.343	.343	.341	.339
36	Hudson ... 48-C	C, T	6-3x5	21.6	98-4000	212.0	6.50	167-1200	6	N	In	L	Sil	1.37	1.37	1.26	1.23	.343	.343	.341	.339
37	International ... U-7	PU	4-3¾x5	22.5	34.5-1200	220.9	4.80	153-1000	4	W	Se	I	Sil	1.78	1.78	1.56	1.56	.402	.402	.432	.432
38	International ... U-10	PU	4-4¼x5	28.9	45-1200	283.7	4.67	207-850	4	W	Se	I	Sil	1.90	1.75	1.68	1.48	.441	.441	.432	.432
39	International ... 300	PU	4-4¾x6	36.1	56.5-1050	425.3	4.74	300-750	4	W	Se	I	Sil	2.18	2.18	1.75	1.93	.381	.426	.432	.432
40	International ... U-21	PU	6-3⅜x4½	33.7	66-2000	298.2	5.72	200-1200	6	W	Se	I	Sil	1.87	1.75	1.62	1.50	.343	.343	.372	.372
41	International ... PA-100	PU	6-5x5½	60.0	110-1400	648.0	5.30	447-700	6	W	Se	I	Sil	2.37	2.37	2.12	2.12	.437	.437	....	....
42	Kermath ... 1-10	M	2-4x4	....	10-800	101.0	....	....	2	N	Se	L	CNS	1.75	1.75	1.50	1.50	....	....	.375	.375
43	Kermath ... ZX	M	4-2⅝x3	....	25-3400	65.0	6.00	40-1700	4	N	In	L	Sil	1.25	1.12	1.12	.875	.250	.250	.310	.310
44	Kermath ... IXL	M	4-3¼x4	....	33-2200	134.0	5.50	97-2200	4	N	In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
45	Kermath ... IXH	M	4-3¼x4	....	50-3200	134.0	5.50	97-2200	4	N	In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
46	Kermath ... 20	M	4-4x4	....	20-1000	201.0	....	....	4	N	Se	L	CNS	1.75	1.75	....	....	.218	.218	.375	.375
47	Kermath ... F	M	4-4⅜x5½	....	55-1500	330.0	4.80	....	4	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.375	.375
48	Kermath ... P-840	M	6-3¼x3¾	....	110-3600	249.0	7.00	....	6	N	In	L	Sil	1.47	1.34	1.31	1.18	.296	.296	.312	.312
49	Kermath ... QXC	M	6-3⅜x4⅛	....	95-3600	221.0	6.50	....	6	N	In	L	Sil	1.87	1.87	1.81	1.81	.281	.281	.310	.310
50	Kermath ... P-640	M	6-3 7/16x4	....	95-3700	223.0	7.20	....	6	N	In	L	Sil	1.59	1.47	1.37	1.31	.296	.296	.312	.312
51	Kermath ... JXD	M	6-4x4¼	....	96-2600	320.0	5.80	225-1000	6	N	In	L	CNS	1.75	1.62	1.50	1.37	.322	.322	.373	.373
52	Kermath ... JXD-HS	M	6-4x4¼	....	120-3000	320.0	6.90	235-2000	6	N	In	L	CNS	1.84	1.62	1.62	1.37	.376	.376	.373	.373
53	Kermath ... WX	M	6-4¼x4½	....	115-2600	383.0	5.80	265-1000	6	N	In	L	Sil	1.87	1.75	1.62	1.50	.356	.356	.373	.373
54	Kermath ... WXL	M	6-4¼x4¾	....	155-3000	404.0	6.50	....	6	N	In	L	CNS	2.06	1.87	1.81	1.62	.500	.500	.373	.373
55	Kermath ... D	M	6-4¾x5¾	....	150-2500	520.0	5.70	351-1000	6	N	Se	L	CNS	2.50	2.25	2.28	2.00	.437	.375	.437	.375
56	Kermath ... L	M	6-5x5¾	....	157-2000	678.0	5.30	482-1000	6	N	Se	L	CNS	2.56	2.37	2.37	2.12	.375	.375	.437	.437
57	Kermath ... LA	M	6-5x5¾	....	200-2400	678.0	5.70	480-1000	6	N	Se	L	CNS	2.62	2.37	2.40	2.00	.437	.375	.437	.437
58	Kermath ... R	M	6-5x5¾	....	225-2400	678.0	5.70	540-1700	6	N	Se	I	CNS	1.93	1.93	1.76	1.76	.375	.375	.375	.375
59	Kermath ... VF	M	8-3 1/16x3⅜	....	85-3800	221.0	6.30	150-2000	8	N	In	L	Sil	1.53	1.53	....	....	.292	.292	.310	.310
60	Kermath ... VM	M	8-3 3/16x3¾	....	95-3600	239.0	6.15	170-2100	8	N	In	L	CNS	1.53	1.53	....	....	.292	.292	.311	.311
61	Kermath ... P-8	M	8-3¼x3½	....	100-3600	232.0	7.00	175-1600	8	N	In	L	Sil	1.37	1.34	1.25	1.19	.328	.328	.312	.312
62	Kermath ... VZ	M	12-2⅞x3¾	....	120-3500	292.0	....	....	12	N	In	L	CNS	1.53	1.53	....	....	.292	.292	.311	.312
63	Kermath ... V	M	12-5x6	....	500-2400	1414.0	5.70	1070-1400	6	N	Se	I	CNS	1.93	1.93	1.76	1.76	.375	.375	.437	.437
64	Lathrop ... Standard	M	2-5 3/16x6½	....	16-600	274.7	....	140-525	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
65	Lathrop ... Standard	M	2-5½x6½	....	20-700	308.8	....	163-525	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
66	Lathrop ... Standard	M	3-5 3/16x6½	....	27-700	412.1	....	206-600	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
67	Lathrop ... Standard	M	3-5½x6½	....	34-800	463.2	....	237-700	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
68	Lathrop ... LH	M	4-3¼x4	....	38-2200	133.0	....	92-2000	4	N	In	L	CNS	....	....	1.25	1.12	.312	.312	.312	.312
69	Lathrop ... LH	M	4-4x4½	....	49-1900	226.0	....	152-1300	4	N	In	L	CNS	....	....	1.50	1.37	.312	.312	.375	.375
70	Lathrop ... Standard	M	4-5 3/16x6½	....	29-700	549.5	....	233-500	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
71	Lathrop ... Standard	M	4-5½x6½	....	49-800	617.7	....	342-600	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
72	Lathrop ... Engineers	M	4-5½x7	....	64-1000	665.2	....	373-650	1	N	Se	L	CNS	2.68	2.50	2.31	2.12	.375	.375	.500	.500
73	Lathrop ... Engineers	M	4-6x7	....	76-1000	791.6	....	461-700	1	N	Se	L	CNS	2.68	2.50	2.31	2.12	.375	.375	.500	.500
74	Lathrop ... LH	M	6-3¾x4¼	....	62-2200	282.0	....	173-550	6	N	In	L	CNS	....	....	1.50	1.37	.312	.312	.375	.375
75	Lathrop ... LH-D6	M	6-4x4¼	....	107-2500	320.0	5.80	226-2500	6	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.375	.375
76	Lathrop ... Mystic	M	6-4½x5½	....	96-1600	524.8	....	321-1350	6	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
77	Lathrop ... Mystic	M	6-4¾x5½	....	106-1600	584.7	....	379-900	6	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
78	Lathrop ... Standard	M	6-5½x6½	....	73-750	926.5	....	515-675	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
79	Lathrop ... Standard	M	6-5½x6½	....	103-1000	926.5	....	550-825	1	N	Se	T	CNS	2.25	2.25	2.00	2.00	.500	.500	.437	.437
80	Lathrop ... Mystic	M	6-5½x6½	....	155-1500	926.5	....	561-1200	6	N	Se	L	CNS	2.68	2.68	2.31	2.31	.437	.437	.500	.500
81	Lathrop ... Mystic	M	6-5¾x6½	....	179-1600	1012.8	....	640-1100	6	N	Se	L	CNS	2.68	2.68	2.31	2.31	.437	.437	.500	.500
82	Lehman-Ford ... F1	M	4-3⅞x4¼	....	50-2500	200.5	4.22	122-1000	4	N	In	L	CNS	1.37	1.37	....	....	.287	.287	.250	.250
83	Lehman-Ford ... D5	M, Ind	8-2.6x3.2	....	60-3400	136.0	6.60	94-2500	8	N	In	L	CNS	1.28	1.28	....	....	.251	.251	.279	.279
84	Lehman-Ford ... V5	M, Ind	8-3 1/16x3¾	....	85-3400	221.0	6.15	155-2200	8	N	In	L	CNS	1.54	1.54	....	....	.292	.292	.311	.311
85	Lehman-Mercury ... M5	M, Ind	8-3.185x3¾	....	95-3400	239.0	6.15	170-2100	8	N	In	L	CNS	1.54	1.54	....	....	.292	.292	.311	.311
86	Lehman-Zephyr ... Z5	M, Ind	12-2⅞x3¾	....	120-3400	267.0	6.70	186-2000	12	N	In	L	CNS	1.54	1.54	....	....	.292	.292	.311	.311
87	Mack ... EN-11	T	6-3 3/16x4⅜	24.6	67-3000	210.0	5.75	145-1100	6	N	In	L	Sil	1.51	1.68	1.37	1.18	.296	.296	.343	.343
88	Mack ... FO	1, B, Tr	6-3½x4⅜	29.4	78-3000	253.0	5.69	166-1200	6	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
89	Mack ... FM	T, B, Tr	6-3⅝x4⅜	31.6	83-3000	271.0	5.65	188-1200	6	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
90	Mack ... BG	T, B, Tr	6-3⅝x5	31.6	96-2800	310.0	5.40	210-1000	6	N	In	L	AUS	1.89	1.76	1.62	1.50	.365	.365	.375	.375
91	Mack ... FK	T, B, Tr	6-3¾x4⅜	33.8	94-3000	290.0	5.68	200-1200	6	N	In	L	Sil	1.76	1.51	1.62	1.37	.354	.354	.406	.406
92	Mack ... CU	T, B, Tr	6-3⅞x5	36.0	103-2600	353.8	5.25	250-1000	6	N	In	L	AUS	1.89	1.76	1.62	1.50	.365	.365	.375	.375
93	Mack ... CE	T, Tr	6-4x5½	38.4	108-2400	415.0	5.00	270-1000	6	N	Se	L	AUS	2.17	2.01	1.81	1.68	.375	.375	.500	.500
94	Mack ... CF	T, Tr	6-4¼x5½	43.3	118-2400	468.0	5.00	310-1000	6	N	Se	L	AUS	2.17	2.01	1.81	1.68	.375	.375	.500	.500
95	Mack ... EO	T, B, Tr	6-4⅜x5¾	45.7	140-2300	519.0	5.50	368-1000	6	N	In	I	AUS	2.18	1.89	2.04	1.75	.500	.500	.437	.437
96	Mack ... CT	T, B, Tr	6-4½x5½	48.6	126-2400	524.8	4.80	350-1000	6	N	Se	L	AUS	2.17	2.01	1.81	1.68	.375	.375	.500	.500
97	Mack ... EP	T, B, Tr	6-4¾x5¾	54.1	155-2200	611.0	5.40	443-1000	6	N	In	I	AUS	2.18	1.89	2.04	1.75	.500	.500	.437	.437
98	Mack ... EY	T, B, Tr	6-5x6	60.0	170-2100	707.0	5.35	502-1000	6	N	In	I	AUS	2.18	1.89	2.04	1.75	.500	.500	.437	.437
99	M-M Twin City (6) ... EE	Tr, Ind	4-3⅝x4	20.9	24-1400	165.1	5.75	100-1100	2	N	Se	HB	Sil	1.46	1.46	1.25	1.25	.354	.354	.343	.343

(For abbreviations see pages 214-215)

Commercial Vehicle Engines—*Continued*

Valves – Seats – Angle (Deg.)	Valves – Seats – Inserts Used?	Valves – Seats – Insert Material (S.A.E. No.)	Front End Drive—Type	Pistons – Material	Pistons – Length (In.)	Pistons – Weight with Pins, Rings Bushings (Oz.)	Pistons – Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Connecting Rods – Material	Connecting Rods – Center to Center Length (In.)	Connecting Rods – Weight with Bushing and Cap (Oz.)	Crankshaft – Material	Crankshaft – Counterbalance Used?	Crankshaft – Crank-Pin – Diameter and Length (In.)	Crankshaft – Main Bearings – Number	Crankshaft – Main Bearings – Diameter and Length (In.) – Front	Crankshaft – Main Bearings – Diameter and Length (In.) – Rear	Oil Pressure To—	Spark Plug—Thread Size	Carburetor – Make	Carburetor – Size	Engine Weight without Carburetor or Ignition (Lb.)	Overall Dimensions (In.) – Width	Overall Dimensions (In.) – Height	Overall Dimensions (In.) – Length	Line Number
45	E	....	HG	CI	4.87	73	1.37x3.75	4	1035	9½	58	1045	N	2.00x2.25	3	2.00x3.18	2.00x3.31	abe	⅞-18	Op	1¼	655	20 17/32	28 7/32	36 5/32	1
45	N	....	HG	CI	5.25	82	1.50x3.75	4	1035	10⅞	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	⅞-18	Op	1¼	875	21 31/32	30⅞	41 1/16	2
45	N	....	HG	CI	5.25	95	1.50x4.00	4	1035	10⅞	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	⅞-18	Op	1½	880	21 31/32	30⅞	41 1/16	3
45	N	....	HG	CI	5.25	103	1.50x4.25	4	1035	10⅞	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	⅞-18	Op	1½	885	21 31/32	30⅞	41 1/16	4
45	N	....	HG	CI	5.25	106	1.50x4.50	4	1035	10⅞	83	1045	N	2.50x2.62	3	3.00x3.37	3.00x3.50	abe	⅞-18	Op	1½	890	21 31/32	30⅞	41 1/16	5
45	E	....	HG	CI	7.00	196	1.87x4.87	5	1035	13¼	178	1045	N	3.00x3.00	3	3.75x4.37	3.75x4.50	abe	⅞-18	Op	1¾	1800	26 15/16	38	52½	6
45	E	....	HG	CI	7.00	222	1.87x5.37	5	1035	13¼	178	1045	N	3.00x3.00	3	3.75x4.37	3.75x4.50	abe	⅞-18	Op	1¾	1815	26 15/16	38	52½	7
45	E	....	HG	CI	7.00	240	1.87x5.75	5	1035	13¼	178	1045	N	3.00x3.00	3	3.75x4.37	3.75x4.50	abe	⅞-18	Op	2	1850	26 15/16	38	52½	8
30	N	....	HG	CI	3.50	53	.875x2.67	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	⅞-18	Op	1¼	480	17 7/16	20 7/16	33 7/16	9
30	N	....	HG	CI	3.50	53	.875x2.67	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	⅞-18	Op	1¼	480	17 7/16	20 7/16	33 7/16	10
30	N	....	HG	CI	3.50	53	.875x2.79	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	⅞-18	Op	1¼	480	17 7/16	20 7/16	33 7/16	11
30	N	....	HG	CI	3.50	53	.875x2.79	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	⅞-18	Op	1¼	480	17 7/16	20 7/16	33 7/16	12
30	N	....	HG	Al	3.50	24	.875x2.90	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	⅞-18	Op	1¼	481	17 7/16	20 7/16	30 7/16	13
30	N	....	HG	Al	3.50	24	.875x2.90	4	1035	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abe	⅞-18	Op	1¼	483	17 7/16	20 7/16	33 7/16	14
45	N	....	HG	CI	4.37	43	1.00x2.90	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	⅞-18	Op	1¼	550	17⅝	23½	37⅜	15
45	N	....	HG	CI	4.18	48	1.00x3.15	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	⅞-18	Op	1¼	560	17⅝	23½	37⅜	16
45	N	....	HG	CI	4.12	56	1.00x3.37	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	⅞-18	Op	1¼	565	17⅝	23½	37⅝	17
45	N	....	HG	Al	4.18	40	1.00x3.51	4	1035	8	37	CS‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	⅞-18	Op	1¼	570	17⅝	23½	37⅜	18
45	N	....	HG	CI	4.56	64	1.12x3.56	4	3140	9⅛	51	1045	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abe	⅞-18	Op	1½	805	21	27	41 15/16	19
45	N	....	HG	CI	4.56	65	1.12x3.62	4	3140	9⅛	51	1045	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abe	⅞-18	Op	1½	810	21	27	41 15/16	20
45	N	....	HG	CI	4.56	83	1.12x3.68	4	3140	9⅛	51	1045	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abe	⅞-18	Op	1½	820	21	27	41 15/16	21
45	N	....	HG	Al	4.18	47	1.12x3.56	4	3140	8⅞	50	CS‡	Y	2.25x1.65	7	2.62x1.43	2.62x2.21	abe	⅞-18	Op	Op	811	21	27	41 15/16	22
45	N	....	HG	Al	4.37	55	1.12x3.68	4	3140	8⅞	50	CS‡	Y	2.25x1.65	7	2.62x1.43	2.62x2.21	abe	⅞-18	Op	Op	825	21	27	41 15/16	23
45	N	....	HG	CI	4.87	79	1.25x3.93	4	1035	9⅝	64	1045	N	2.50x1.75	7	3.00x2.00	3.00x3.00	abe	⅞-18	Op	1¾	975	21 11/32	31 13/16	45 9/16	24
45	N	....	HG	CI	4.87	85	1.12x3.93	4	1035	9⅝	64	1045	N	2.50x1.75	7	3.00x2.00	3.00x3.00	abe	⅞-18	Op	1¾	975	21 11/32	31 13/16	45 9/16	25
45	N	....	HG	CI	4.87	87	1.12x4.06	4	1035	9⅝	64	1045	N	2.50x1.75	7	3.00x2.00	3.00x3.00	abe	⅞-18	Op	1¾	975	21 11/32	31 13/16	45 9/16	26
45	N	....	HG	Al	4.87	60	1.25x3.93	5	3140	9⅜	81	1045	N	2.62x2.00	7	3.00x1.93	3.00x2.93	abe	⅞-18	Op	1¾	1000	21 11/32	31 13/16	45 9/16	27
45	N	....	HG	Al	4.87	62	1.25x4.06	5	3140	9⅜	81	1045	N	2.62x2.00	7	3.00x1.93	3.00x2.93	abe	⅞-18	Op	1¾	1010	21 11/32	31 13/16	45 9/16	28
45	N	....	HG	Al	4.87	65	1.25x4.10	5	CNM	9⅜	99	CS‡	N	3.00x2.00	7	3.50x1.93	3.50x2.93	abe	⅞-18	Op	1¾	1195	22 5/16	30	44¾	29
(h)	N	....	HG	Al	4.87	69	1.25x4.10	5	CNM	9⅜	99	CS‡	N	3.00x2.00	7	3.50x1.93	3.50x2.93	abe	⅞-18	Op	1¾	1195	22 5/16	30	44¾	30
30	E	....	HG	Al	6.50	95	1.50x4.43	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	⅞-18	Op	2	1810	24½	40½	54½	31
30	E	....	HG	Al	6.87	105	1.50x4.56	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	⅞-18	Op	2	1810	24½	40½	54½	32
30	E	....	HG	Al	6.87	117	1.50x4.81	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	⅞-18	Op	2	1830	24½	40½	54½	33
30	E	....	HG	Al	7.25	127	1.50x5.06	4	3140	12	143	1045	N	3.00x2.25	7	3.50x2.37	3.50x3.50	abce	⅞-18	Op	2	1830	24½	40½	54½	34
45	N	....	HG	Al	3.18	8	.750x2.44	4	DFS	8⅝	29	DFS	Y	1.94x1.37	3	2.34x1.62	2.41x2.37	Splash	14 mm	Car	1¼	482	25	37¼	29½	35
45	N	....	HG	Al	3.18	8	.750x2.44	4	DFS	8 11/64	29	DFS	Y	1.94x1.32	3	2.34x1.62	2.41x2.37	Splash	14 mm	Car	1¼	504	25	37¼	29½	36
45	....	....	HG	CI	4.71	63	1.29x3.37	4	AS	10	73	CNS	N	2.25x2.23	2♠	SAE-313	SAE-315	Splash	⅞-18	Zen	1¼	1435§	22½	39	40 29/32	37
45	....	....	HG	CI	6.03	95	1.29x3.68	4	AS	11¼	102	CNS	N	2.62x2.73	2♠	SAE-314	SAE-316	Splash	⅞-18	Zen	1¼	1735§	25¾	42 13/16	42	38
45	....	....	HG	CI	5.82	122	1.48x4.12	4	AS	13	152	CNS	N	3.12x2.73	2♠	SAE-315	SAE-318	Splash	⅞-18	Zen	1¼	2160§	27¼	44½	45 13/16	39
45	....	....	HG	Al	4.56	34	1.10x3.17	4	AS	9¼	49	CS‡	N	2.25x1.62	7	2.70x1.53	2.70x2.54	abcde	⅞-18	Zen	1⅜	1950§	28	35⅝	49⅜	40
45	....	....	HG	CI	5.75	130	1.50x4.10	4	AS	11¾	137	CNS	N	2.75x2.25	7	3.25x2.56	3.25x3.50	abcde	⅞-18	Zen	1½	3120§	35	50⅜	59 1/16	41
45	N	....	SG	CI	4.12	73	.875x3.62	3	DFS	9	....	DFS	N	1.37x2.25	2	1.37x1.50	1.37x3.00	ae	⅞-18	May	⅞	465§	18¼	28¾	40 1/16	42
30	N	....	HG	CI	2.68	19	.687x2.18	3	CS	5⅛	15	CS	N	1.50x1.00	3	2.00x1.37	2.00x1.31	abcr	14 mm	Str	¾	260	18 11/16	17⅝	28 1/16	43
30	N	....	HG	Al	3.06	20	.750x2.87	4	3140	6 1/16	20	CS	N	1.75x1.12	3	2.00x1.62	2.00x1.58	abcr	⅞-18	Str	1¼	370	23⅛	21 11/16	34 1/16	44
30	N	....	HG	Al	3.06	20	.750x2.87	4	3140	6 1/16	20	CS	N	1.75x1.12	3	2.00x1.62	2.00x1.58	abcr	⅞-18	Str	1¼	405	23⅛	21 11/16	34 1/16	45
45	N	....	SG	CI	4.12	73	.875x3.12	3	DFS	9	38	CS	N	1.37x2.25	3	1.37x3.50	1.37x3.00	ae	⅞-18	May	⅞	590§	21	27¼	51⅛	46
45	N	....	HG	Als	5.25	62	1.25x3.87	4	DFS	11	81	DFS	N	2.00x2.25	5	2.00x3.87	2.00x2.62	abcde	⅞-18	Str	1½	830	22½	31⅝	52¼	47
(h)	N	....	Ch	CNI	3.59	32	.937x2.87	3	DFS	7 3/16	32	DFS	Y	2.00x1.06	5	2.50x1.87	2.37x1.25	abcder	14 mm	Str	1½	750§	24	23⅝	52½	48
30	N	....	HG	Al	3.50	73	.875x2.79	4	CS	7	26	CS	N	2.00x1.25	7	2.50x1.93	2.50x1.87	abcr	⅞-18	Str	1¼	620§	24	24¼	42 3/16	49
(h)	N	....	Ch	CI	3.57	....	.937x3.06	3	DFS	7 3/16	37	DFS	Y	2.12x1.28	4	2.62x1.56	2.50x1.25	abcder	14 mm	Str	1½	....	24	23 5/16	47⅝	50
30	N	....	HG	Al	4.18	40	1.00x3.51	4	CS	8	38	CS	N	2.00x1.50	7	2.50x2.12	2.50x1.37	abcr	⅞-18	Str	1½	865§	21 13/16	27¾	52⅝	51
30	N	....	HG	Al	4.18	40	1.00x3.51	4	CS	8	38	CS	N	2.00x1.50	7	2.50x2.12	2.50x1.37	abcr	⅞-18	Str	1½	865§	21 13/16	27¾	52⅝	52
45	N	....	HG	Al	4.56	....	1.12x3.68	4	CS	9⅛	51	CS	N	2.25x1.50	7	2.62x1.75	2.62x2.75	abcr	14 mm	Str	1½	1125§	24¼	29⅝	56 1/16	53
30	N	....	HG	Al	4.00	....	1.12x3.62	4	CS	9	51	CS	Y	2.25x1.12	7	2.68x2.75	2.68x1.75	abcr	14 mm	Str	2	1125§	24¼	29⅝	56 1/16	54
(h)	E	HS	HG	Als	5.25	62	1.25x3.62	4	DFS	11	80	CS	N	2.25x2.23	7	2.50x3.91	2.50x2.56	abcder	14 mm	Str	2	1390§	26¾	33¼	69⅞	55
45	N	....	HG	Als	6.19	82	1.25x4.50	4	DFS	11	80	CS	N	2.25x2.23	7	2.50x3.91	2.50x2.62	abcder	18 mm	Str	2	1570§	29 13/16	34⅛	69⅞	56
(h)	N	....	HG	Als	6.19	82	1.25x4.50	4	DFS	11	80	CS	N	2.25x2.23	7	2.50x3.91	2.50x2.62	abcder	14 mm	Str(2)	1¾	1620§	26⅛	34⅛	69⅞	57
45	N	....	SB	Als	6.19	82	1.25x4.50	4	DFS	11	80	DFS	N	2.25x2.23	7	2.50x3.91	2.50x2.62	abcder	18 mm	Str(2)	1¾	1500§	30½	39¾	69⅞	58
45	E	....	HG	Al	....	16	.750x2.85	3	AS	7	16	CAS	Y	2.00x1.94	3	2.00x1.81	2.00x2.25	ab	⅞-18	Str	1	730	29 1/16	31 1/16	43 13/16	59
45	E	....	HG	Als	....	17	.750x2.84	3	AS	7	17	CAS	Y	2.14x1.75	3	2.50x1.72	2.50x2.25	abce	14 mm	Str	.97	730	29 1/16	31 1/16	43 13/16	60
(h)	N	....	Ch	CI	3.56	32	.937x2.87	3	DFS	7 3/16	32	DFS	Y	2.00x1.56	5	2.37x2.25	2.24x1.31	abcder	14 mm	Str	1½	750§	24	23⅝	52½	61
45	E	....	HG	S	3.25	11	.750x2.48	3	DFS	....	22	CAS	Y	2.12x1.57	4	2.40x1.83	2.40x2.54	abce	14 mm	Str	1	800	24 11/16	22	50⅝	62
45	N	....	SB	Als	6.19	82	1.25x4.50	4	CNS	11	184	CNS	Y	2.75x2.25	7	3.00x3.84	3.00x2.25	abcder	18 mm	Str(4)	2	2700§	42½	43⅝	75 13/16	63
45	....	....	HG	CI	7.00	160	1.37x4.62	4	AS	12¼	96	CNS	N	1.87x2.75	3	2.25x5.00	2.25x4.00	abe	⅞-18	Zen	1¼	975	23½	22	55½	64
45	....	....	HG	CI	7.00	179	1.37x5.00	4	AS	12¼	96	CNS	N	1.87x2.75	3	2.25x5.00	2.25x4.00	abe	⅞-18	Zen	1¼	1000	23½	22	55½	65
45	....	....	HG	CI	7.00	160	1.37x4.62	4	AS	12¼	96	CNS	N	1.87x2.75	4	2.25x5.00	2.25x4.00	abe	⅞-18	Zen	1½	1400	25	22¼	60½	66
45	....	....	HG	CI	7.00	179	1.37x5.00	4	AS	12¼	96	CNS	N	1.87x2.75	4	2.25x5.00	2.25x4.00	abe	⅞-18	Zen	1½	1450	25	22¼	60½	67
30	....	....	HG	Al	3.06	....	.750x2.81	3	AS	6 9/16	....	CNS	N	1.75x1.25	3	2.00x1.56	2.00x1.62	abe	⅞-18	Zen	1	440	17½	14⅜	40½	68
30	....	....	HG	Al	4.12	....	1.00x3.50	3	AS	8	....	CNS	N	2.00x1.50	3	2.00x2.18	2.00x2.62	abe	⅞-18	Zen	1¼	690	21⅞	16	51¼	69
45	....	....	HG	CI	7.00	160	1.37x4.62	4	AS	12¼	96	CNS	N	1.87x2.75	5	2.25x5.00	2.25x4.00	abe	⅞-18	Zen	1½	1700	25¾	22¼	68½	70
45	....	....	HG	CI	7.00	179	1.37x5.00	4	AS	12¼	96	CNS	N	1.87x2.75	5	2.25x5.00	2.25x4.00	abe	⅞-18	Zen	1½	1750	25¾	22¼	68½	71
45	....	....	HG	CI	6.25	186	1.50x5.00	4	AS	13¼	172	CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	abce	⅞-18	Zen	....	2100	29¼	24	74¼	72
45	....	....	HG	CI	6.25	204	1.50x5.50	4	AS	13¼	172	CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	abce	⅞-18	Zen	....	2290	29¼	24	75	73
30	....	....	HG	Al‡	4.31	....	1.00x3.50	3	AS	8	....	CNS	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	⅞-18	Zen	1¼	830	21⅛	17	51	74
30	E	Spec	HG	Al	4.18	40	1.00x3.50	4	DFS	8	36	Spec	N	2.00x1.50	7	2.50x1.31	2.50x1.12	abe	⅞-18	Zen	1½	820	21⅛	25	51	75
45	....	....	HG	CI	5.75	96	1.37x3.87	4	Dur	12¼	68	CNS	N	2.25x2.37	7	2.75x3.25	2.75x2.12	abce	⅞-18	Hol	....	1700	24½	27¾	68	76
45	....	....	HG	CI	5.75	104	1.37x4.12	4	Dur	12¼	68	CNS	N	2.25x2.37	7	2.75x3.25	2.75x2.12	abce	⅞-18	Hol	....	1700	24½	27¾	68	77
45	....	....	HG	CI	7.00	179	1.37x5.00	4	AS	12¼	96	CNS	N	2.12x2.75	7	2.62x5.00	2.62x4.00	abe	⅞-18	Zen(2)	1½	2500	26½	22¾	90½	78
45	....	....	HG	CI	7.00	179	1.37x5.00	4	AS	12¼	96	CNS	N	2.12x2.75	7	2.62x5.00	2.62x4.00	abe	⅞-18	Zen(2)	1½	2500	26½	22¾	88½	79
45	....	....	HG	CI	6.21	176	1.50x5.00	4	AS	13¼	164	CNS	N	2.75x2.75	7	3.00x3.37	3.00x3.25	abce	⅞-18	Hol	....	2435	24½	29⅜	78½	80
45	....	....	HG	CI	6.21	176	1.50x5.12	4	AS	13¼	164	CNS	N	2.75x2.75	7	3.00x3.37	3.00x3.25	abce	⅞-18	Hol	....	2460	24½	29⅜	78½	81
45	N	....	HG	Al	....	....	....	3	....	....	....	DFS	Y	1.50x1.00	3	1.62x....	1.62x....	Splash	⅞-18	Zen	1	580	22	25¾	44¾	82
45	Bo	Tun	HG	CAS	....	8	.687x2.36	3	....	6⅛	10	CAS	Y	1.60x1.54	3	2.00x1.66	2.00x2.00	abc	14 mm	CG	....	500	21¼	29	44	83
45	Bo	Tun	HG	CAS	....	12	.750x2.85	3	....	7	17	CAS	Y	2.00x1.75	3	2.50x1.72	2.50x2.25	abce	14 mm	CG	....	700	22¾	30½	46½	84
45	Bo	Tun	HG	CAS	....	13	.750x2.98	3	....	7	17	CAS	Y	2.14x1.75	3	2.50x1.72	2.50x2.25	abc	14 mm	CG	....	700	23¾	30½	46½	85
45	Bo	Tun	HG	CAS	....	12	.750x2.48	3	....	7 13/32	22	CAS	Y	2.12x1.75	3	2.40x1.84	2.40x2.25	abc	14 mm	CG	....	860	22¾	30½	54	86
30	E	Al	HG	CT	3.56	....	.859x2.68	4	CS	7	....	CS	Y	1.93x1.31	4	2.25x1.18	2.25x1.81	abceft	18 mm	Str	1¼	501	26	26	39 9/32	87
(h)	E	HS	HG	Al	4.75	36	1.10x2.90	5	CS	8⅜	44	CS	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abcet	18 mm	Str	1¼	749	18¼	29 3/16	40	88
(h)	E	HS	HS	Al	4.75	39	1.10x3.05	5	CS	8⅜	44	CS	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abcet	18 mm	Str	1¼	738	18¼	29 3/16	40	89
30	E	Nif	HG	Al	4.31	48	1.00x3.25	4	CNM	11¼	54	CS	Y	2.37x1.62	7	2.62x1.68	2.62x2.78	abcef	18 mm	Str	1½	959	26⅞	34⅞	46 17/32	90
(h)	E	HG	HG	Al	4.75	43	1.10x3.18	5	CS	8⅜	44	CS	Y	2.25x1.56	7	2.62x1.53	2.62x2.15	abcet	18 mm	Str	1½	759	18¼	29 3/16	40	91
30	E	Nif	HG	Al	4.31	40	1.00x3.50	5	CNM	11¼	54	CS	Y	2.37x1.62	7	2.62x1.68	2.62x2.78	abcef	18 mm	Str	1½	907	26⅞	34⅞	46 17/32	92
30	E	Nif	HG	Al	5.10	54	1.12x3.62	4	CNM	12½	83	CS	Y	2.50x1.81	7	3.00x2.25	3.00x3.12	abcef	18 mm	Str	1¾	1199	27¼	41	50 13/16	93
30	E	Nif	HG	Al	5.48	62	1.12x3.87	5	CNM	12½	83	CS	Y	2.50x1.81	7	3.00x2.25	3.00x3.12	abcef	18 mm	Str	1¾	1209	27¼	41	50 13/16	94
30	E	Nif	HG	Al	5.75	68	1.43x3.78	5	CNM	11¼	100	CS	Y	3.00x2.09	7	3.50x1.68	3.50x2.37	abcef	14 mm	Str	1¾	1687	30½	47½	53 3/32	95
30	E	Nif	HG	Al	5.48	63	1.12x4.12	5	CS	12½	83	CS	Y	2.50x1.81	7	3.00x2.25	3.00x3.12	abcef	18 mm	Str	1¾	1214	27¼	41	50 13/16	96
30	E	Nif	HG	Al	5.75	83	1.43x4.15	5	CNM	11¼	100	CS	Y	3.00x2.09	7	3.50x1.68	3.50x2.37	abcef	14 mm	Str	2	1700	30½	47¼	53 3/32	97
30	E	Nif	HG	Al	5.62	95	1.43x4.40	5	CNM	11¼	100	CS	Y	3.00x2.09	7	3.50x1.68	3.50x2.37	abcef	14 mm	Str	2	1710	30½	47¼	53 3/32	98
45	E	CNM	HG	CI	4.90	56	1.00x3.00	4	1040	9	54	1045	N	2.62x1.28	2	SAE-212	3.00x2.18	abet	14 mm	Sch	1	640	18½	36½	34	99

(For abbreviations see pages 214-215)

American Stock, Marine and

Line Number	MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated Hp. (A.M.A.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio - to 1	Maximum Torque at R.P.M. (Lb. Ft.)	CYLINDERS: No. Cast in One Piece	CYLINDERS: Liners—Type	Crankcase—Upper Half Integral with Cylinders?	VALVES: Arrangement	VALVES: Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.): Intake	Max. Head Diameter (In.): Exhaust	Min. Port Diameter (In.): Intake	Min. Port Diameter (In.): Exhaust	Lift (In.): Intake	Lift (In.): Exhaust	Stem Diameter (In.): Intake	Stem Diameter (In.): Exhaust
1	M-M Twin City....RE	Tr, Ind	4-3⅝x4½	20.9	33-1500	185.8	5.75	120-1150	2	N	Se	HB	Sil	1.46	1.46	1.25	1.25	.354	.354	.343	.343
2	M-M Twin City....KEC	Tr, Ind	4-4¼x5	28.9	47-1275	283.7	5.60	190-1000	4	N	Se	I	Sil	1.71	1.59	1.50	1.37	.488	.488	.437	.437
3	M-M Twin City....KED	Tr, Ind	4-4¼x5	28.9	47-1275	283.7	5.60	190-1000	4	N	Se	I	Sil	1.71	1.59	1.50	1.37	.488	.488	.437	.437
4	M-M Twin City....GE	Tr, Ind	4-4⅝x6	34.2	59-1075	403.2	5.25	295-950	2	N	Se	I	Sil	1.84	1.71	1.62	1.50	.488	.488	.437	.437
5	M-M Twin City....TA	M, Ind	4-7¼x9	84.1	119-650	1486.0	4.80	1050-300	1	N	Se	I	Sil	3.34	2.84	3.00	3.00	.687	.687	.687	.687
6	M-M Twin City....BE	M, Ind	4-7¾x9	96.0	136-650	1698.0	4.40	1150-300	1	N	Se	I	Sil	3.50	2.84	3.00	3.00	.687	.687	.687	.687
7	M-M Twin City....ME	M, Ind	4-8x9	102.0	145-650	1810.0	4.70	1250-300	1	N	Se	I	Sil	3.50	2.84	3.00	3.00	.687	.687	.687	.687
8	M-M Twin City....SE	M, Ind	6-7¼x9	120.0	173-650	2229.0	4.80	1450-400	1	N	Se	I	Sil	3.50	2.84	3.00	3.00	.687	.687	.687	.687
9	M-M Twin City....TE	M, Tr	6-7¾x9	144.0	198-650	2547.0	4.40	1660-450	1	N	Se	I	Sil	3.50	2.84	3.00	3.00	.687	.687	.687	.687
10	M-M Twin City....NE	M, Ind	6-8x9	153.6	210-650	2714.0	4.70	1780-450	1	N	Se	I	Sil	3.50	2.84	3.00	3.00	.687	.687	.687	.687
11	Murray & Tregurtha....OC-4	M	4-6½x8		80-1000	1062.4	3.33	560-600	2	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
12	Murray & Tregurtha....M-4	M	4-6½x8		90-1000	1062.4	4.20	660-700	2	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
13	Murray & Tregurtha....K-6	M	6-6¼x7¾		346-1650	1426.6	5.25	1110-1525	3	N	Se	I	CNS	2.46	2.46	2.25	2.25	.375	.375	.437	.437
14	Murray & Tregurtha....OC-6	M	6-6½x8		140-1100	1593.6	3.33	910-600	2	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
15	Murray & Tregurtha....M-6	M	6-6½x8		175-1100	1593.6	4.20	882-695	2	N	Se	I	CNS	2.46	2.46	2.25	2.25	.500	.500	.437	.437
16	Murray & Tregurtha....OCX-6	M	6-7¼x8		175-1100	1981.4	4.00	1030-800	2	N	Se	I	CNS	2.71	2.46	2.37	2.25	.531	.531	.437	.437
17	Plymouth....P9-10	C, T	6-3⅛x4⅜	23.4	84-3600	201.3	6.70	154-1200	6	N	In	L	Sil	1.46	1.46	1.31	1.31	.312	.312	.340	.340
18	Regal....Y	M	1-3¼x3½		2-800	29.0			1		Se	L	CI			1.12	1.12	.312	.312	.312	.312
19	Regal....OA	M	1-4x4½		4-800	56.0			1		Se	L	CI			1.50	1.50	.312	.312	.375	.375
20	Regal....HA	M	1-4¾x5½		6-800	97.0			1		Se	L	CI			2.00	2.00	.375	.375	.375	.375
21	Regal....EA	M	1-5¼x6½		7-600	141.0			1		Se	L	CI			2.12	2.12	.375	.375	.375	.375
22	Regal....DV	M	2-2½x2¾		5-2000	27.0			2		In	L	AS								
23	Regal....XB	M	2-3¼x4		15-1900	66.3			2		In	L	AS								
24	Regal....NB	M	2-4x4½		8-800	112.0			1		Se	L	CI			1.50	1.50	.312	.312	.375	.375
25	Regal....(7)GB	M	2-4¾x6		16-1000	213.0			2		Se	L	CI			2.18	2.18	.375	.375	.375	.375
26	Regal....KB	M	2-5½x7		16-600	332.0					Se	L	CI			2.37	2.37	.437	.437	.437	.437
27	Regal....LB	M	2-6½x8		20-600	531.0			1		Se	L	CI			2.62	2.62	.437	.437	.500	.500
28	Regal....SC	M	4-7½x9		50-400	1590.0			1		Se	L	CI			2.62	2.62	.375	.375	.562	.562
29	Reo....228	T	6-3⅜x4¼	27.3	78-3200	228.0	6.20	169-1100	6		In	L	Sil	1.71	1.62			.312	.312	.373	.373
30	Reo....245	T, B	6-3½x4¼	29.4	86-3400	245.0	6.20	174-1000	6		In	L	Sil	1.71	1.62			.312	.312	.373	.373
31	Reo....288	T, B	6-3½x5	29.4	87-3000	288.0	6.20	208-800	6		In	L	Sil	1.71	1.62			.312	.312	.373	.373
32	Reo....310	T, B	6-3⅝x5	31.5	97-2800	310.0	6.20	226-1000	6		In	L	Sil	1.71	1.62	1.43	1.43	.312	.312	.373	.373
33	Reo....361	T, B	6-4⅛x4½	40.8	100-2800	361.0	6.00	254-800	6		In	L	Tun	2.06	1.87	1.81	1.62	.359	.359	.434	.432
34	Scripps....34	M	4-3¼x4		30-	134.0	5.20	92-2000	4		In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
35	Scripps....36	M	4-3¼x4		50-3200	134.0			4		In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
36	Scripps....F4	M	4-3¾x5		81-3000	220.0	6.10		4		In	L	Sil	1.93	1.93			.406	.406	.375	.375
37	Scripps....94-95	M	6-3⅜x4⅛		70-2000	221.0	5.85	154-1000	6		In	L	Sil	1.60	1.39	1.43	1.12	.281	.281	.312	.312
38	Scripps....96-97	M	6-3⅜x4⅛		90-3600	221.0			6		In	L	Sil	1.60	1.39	1.43	1.12	.281	.281	.312	.312
39	Scripps....F6	M	6-3¾x5		120-3000	331.0	6.10		6		In	L	Sil	1.93	1.93			.406	.406	.375	.375
40	Scripps....104-105	M	6-4x4¼		83-2000	320.0	5.63	204-1000	6		In	L	Sil	1.75	1.62	1.50	1.37	.322	.322	.373	.373
41	Scripps....106-107	M	6-4x4¼		95-2600	320.0			6		In	L	Sil	1.75	1.62	1.50	1.37	.322	.322	.373	.373
42	Scripps....150, 1, 2, 3	M	6-4¼x5¼		165-3000	447.0	6.20		2		Se	L	Sil	2.25	2.25			.375	.375	.437	.437
43	Scripps....154, 5, 6, 7	M	6-4¼x5¼		155-3000	447.0	6.20		2		Se	L	Sil	2.25	2.25			.375	.375	.437	.437
44	Scripps....160, 1, 2, 3	M	6-4½x5¾		166-2400	549.0	5.20		2		Se	L	Sil	2.37	2.28			.405	.405	.437	.437
45	Scripps....164, 5	M	6-4½x5¾		125-2000	549.0	5.20		2		Se	L	Sil	2.37	2.28			.405	.405	.437	.437
46	Scripps....170, 1, 2, 3	M	6-4¾x5¾		186-2400	611.0	5.20		2		Se	L	Sil	2.37	2.28			.405	.405	.437	.437
47	Scripps....174, 5	M	6-4¾x5¾		146-2000	611.0	5.20		2		Se	L	Sil	2.37	2.28			.405	.405	.437	.437
48	Scripps....200, 1, 2, 3	M	6-5x5¾		212-2400	677.0	6.20		2		Se	L	Sil	2.56	2.28			.405	.405	.437	.437
49	Scripps....204, 5, 6, 7	M	6-5x5¾		165-2000	677.0	6.20		2		Se	L	Sil	2.56	2.28			.405	.405	.437	.437
50	Scripps....208, 9	M	6-5x5¾		220-2400	677.0	5.85		2		Se	L	Sil	2.50	2.37	2.37	2.25	.406	.375	.437	.437
51	Scripps....214, 15	M	6-5x5¾		185-2000	677.0	5.00		2		Se	L	Sil	2.50	2.37	2.37	2.25	.406	.375	.437	.437
52	Scripps....V8	M	8-3 1/16x3¾		85-3400	221.0	6.16	150-2200	8	N	In	L	Sil	1.53	1.53			.296	.296	.312	.312
53	Scripps....V8-Mercury	M	8-3.185x3¾		95-3600	239.0	6.15	170-2100	8	N	In	L	CNS	1.53	1.53			.292	.292	.311	.311
54	Scripps.V12-61,63,65,67,71,73,75,77	M	12-2¾x3¾		110-3900	267.3	6.70	186-2000	12	N	In	L	CNS	1.53	1.53			.292	.292	.311	.311
55	Scripps....300, 1, 2, 3	M	12-4¼x5¼		304-2400	894.0	6.20		2		Se	L	Sil	2.25	2.25			.375	.375	.437	.437
56	Scripps....304, 5, 6, 7	M	12-4¼x5¼		280-2400	894.0	6.20		2		Se	L	Sil	2.25	2.25			.375	.375	.437	.437
57	Seaman....EM-2	M	2-2½x2½		6-1800	24.5	7.30	20-1000	2		In		Two-Cycle Motor								
58	Seaman....EVM-4	M	4-2½x2½		15-2600	49.0	7.30	20-2600	2		In		Two-Cycle Motor								
59	Seaman....(8)EC-2	Ind	2-2½x2½	5.0	6-1800	24.5	7.30		2		In		Two-Cycle Motor								
60	Speedway....SW	M	6-4¼x4¾		115-2500	404.6	5.30	265-1100	6	N	In	L	CNS								
61	Speedway....MP	M	6-5¾x7		190-1300	1092.0	4.30	780-1000	2	N	Se	L	Spec	2.50	2.50			.562	.562	.531	.531
62	Speedway....MC	M	6-5¾x7		260-1800	1092.0	5.00	835-1315	2	N	Se	L	Spec	2.50	2.50			.562	.562	.531	.531
63	Speedway....R	M	6-7x8½		300-1200	1963.0	4.20	1480-800	1	N	Se	I	Spec	2.25	2.25			.500	.500	.562	.562
64	Sterling....Neptune D2-12	M, Ind	2-5½x7	24.2	15-500	332.6		158-400	2	N	Se	L	Sil	2.06	2.06			.375	.375	.437	.437
65	Sterling....Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1	115-1200	780.0	4.30	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
66	Sterling....Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1	145-1500	780.0	4.68	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
67	Sterling....Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1	145-1500	780.0	4.68	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
68	Sterling....Petrel L-6-6	M,T,Tr,B,Ind	6-5¼x6	66.1	180-1800	780.0	5.00	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
69	Sterling....Petrel Reduction L	M,T,Tr,B,Ind	6-5¼x6	66.1	175-1800	780.0	4.68	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
70	Sterling....Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1	200-2000	780.0	5.54	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
71	Sterling....Petrel L-6	M,T,Tr,B,Ind	6-5¼x6	66.1	225-2200	780.0	5.50	500-1400	6	N	Se	L	Sil	2.25	2.25			.455	.455	.437	.437
72	Sterling....Chevron 6	Tr, M, Ind	6-5¼x6¾	72.6	85-800	962.0		590-1200	2	N	Se	T	Sil	2.25	2.25			.375	.375	.500	.500
73	Sterling....Chevron 6	Tr, M, Ind	6-5½x6¾	72.6	130-1200	962.0		590-1200	2	N	Se	T	Sil	2.25	2.25			.375	.375	.500	.500
74	Sterling....Chevron 6	Tr, M, Ind	6-5½x6¾	72.6	150-1500	962.0		590-1200	2	N	Se	T	Sil	2.25	2.25			.375	.375	.500	.500
75	Sterling....Dolphin-Med. GRM-6	Tr, M, Ind	6-5¾x6¾	79.3	165-1200	1051.6	3.85	785-1200	2	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
76	Sterling....Dolphin 6-GR-6	Tr, M, Ind	6-5¾x6¾	79.3	225-1550	1051.6	4.08	785-1200	2	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
77	Sterling....Dolphin 6-GRS-6	Tr, M, Ind	6-5¾x6¾	79.3	300-2000	1051.6	4.70	785-1200	2	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
78	Sterling....Coast Guard M-6	Tr, M, Ind	6-6¼x7¾	93.7	225-1200	1426.8	4.13	986-1200	6	W	Se	I	Sil	1.87	1.87			.483	.483	.437	.437
79	Sterling....Coast Guard 6-M-6	Tr, M, Ind	6-6¼x7¾	93.7	300-1550	1426.8	4.13	986-1200	6	W	Se	I	Sil	1.87	1.87			.483	.483	.437	.437
80	Sterling....Viking 11 T-6	Tr, M, Ind	6-8x9	153.6	190-600	2714.3	3.93	1900-1000	6	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
81	Sterling....Viking 11 T-6	Tr, M, Ind	6-8x9	153.6	300-900	2714.3	4.18	1900-1000	6	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
82	Sterling....Viking 11 T-6	Tr, M, Ind	6-8x9	153.6	425-1200	2714.3	4.18	1900-1000	6	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
83	Sterling....Dolphin-Med. GRM-8	Tr, M, Ind	8-5¾x6¾	105.8	220-1200	1402.2	3.85	1055-1300	2	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
84	Sterling....Dolphin 8-GR-8	Tr, M, Ind	8-5¾x6¾	105.8	300-1550	1402.2	4.08	1055-1300	2	N	Se	I	Sil	1.87	1.87			.375	.375	.437	.437
85	Sterling....Viking 11 8-T-8	Tr, M, Ind	8-8x9	204.8	250-600	3619.0	3.93	2520-1050	8	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
86	Sterling....Viking 11 8-T-8	Tr, M, Ind	8-8x9	204.8	400-900	3619.0	4.18	2520-1050	8	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
87	Sterling....Viking 11 8-T-8	Tr, M, Ind	8-8x9	204.8	565-1200	3619.0	4.18	2520-1050	8	W	Se	I	Sil	2.59	2.59			.556	.556	.562	.562
88	Thorobred....K	M	1-3¾x4¾		5-1000	52.5	4.00		1	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
89	Thorobred....KK	M	2-3¾x4¾		10-1100	105.0	4.00	54-800	2	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
90	Thorobred....Meteor	M	4-2½x3⅛		18-2800	61.3	5.70	40-1800	4	N	Se	L	CHS	1.12	.937	1.00	.812	.228	.250	.312	.312
91	Thorobred....DS	M	4-2¾x4		16-1800	95.0	4.66	52-1300	4	N	In	L	CAI	1.46	1.34	1.31	1.18	.250	.250	.312	.312
92	Thorobred....Arrowhead Jr.	M	4-3¼x4		35-2600	133.0	5.60	92-1200	4	N	In	L	CHS	1.34	1.34	1.21	1.21	.281	.281	.312	.312
93	Thorobred....Arrowhead	M	4-3⅝x4½		42-2250	186.0	4.60	121-900	4	N	In	L	Sil	1.56	1.56	1.37	1.37	.281	.281	.375	.375
94	Thorobred....AA	M	4-3¾x4¾		24-1200	210.0	4.00	112-700	2	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
95	Thorobred....F	M	4-4 1/16x5		36-1400	259.0	4.00	142-1000	4	N	Se	L	NCI	1.93	1.93	1.75	1.75	.300	.300	.375	.375
96	Thorobred....B	M	4-4½x5		44-1800	318.0	4.00	180-900	4	N	Se	L	Dia	2.09	2.09	1.93	1.93	.300	.300	.375	.375
97	Thorobred....BB-4	M	4-4½x6		56-1600	382.0	4.00	224-1100	4	N	Se	L	Dia	2.34	2.34	2.12	2.12	.300	.300	.434	.434
98	Thorobred....BC-4	M	4-5x7		56-1200	550.0	4.00	292-900	2	N	Se	L	CAI	2.75	2.75	2.37	2.37	.375	.375	.621	.621
99	Thorobred....BCS-4	M	4-5¾x7		71-1100	727.0	4.00	408-900	2	N	Se	L	CAI	2.75	2.75	2.37	2.37	.375	.375	.621	.621

(For abbreviations see pages 214-215)

Commercial Vehicle Engines—*Continued*

Valves—Seats—Angle (Deg.)	Valves—Seats—Inserts Used?	Valves—Seats—Insert Material (S.A.E. No.)	Front End Drive—Type	Pistons—Material	Pistons—Length (In.)	Pistons—Weight with Pins, Rings Bushings (Oz.)	Pistons—Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Connecting Rods—Material	Connecting Rods—Center to Center Length (In.)	Connecting Rods—Weight with Bushing and Cap (Oz.)	Crankshaft—Material	Crankshaft—Counterbalance Used?	Crankshaft—Crank-Pin—Diameter and Length (In.)	Crankshaft—Main Bearings—Number	Crankshaft—Main Bearings—Diameter and Length (In.)—Front	Crankshaft—Main Bearings—Diameter and Length (In.)—Rear	Oil Pressure To—	Spark Plug—Thread Size	Carburetor—Make	Carburetor—Size	Engine Weight without Carburetor or Ignition (Lb.)	Overall Dimensions (In.)—Width	Overall Dimensions (In.)—Height	Overall Dimensions (In.)—Length	Line Number
45	E	CNM	HG	CI	4.37	54	1.00x3.00	4	1040	9	54	1045	N	2.62x1.28	2‡	SAE-313	SAE-314	bet	14 mm	Sch	1	650	18½	36½	34	1
45	E	CNM	HG	CI	5.00	80	1.25x3.87	4	1040	10	97	1045	N	2.37x2.50	3	2.50x2.50	2.62x3.50	abceg	⅞-18	Sch	1	1125	24¼	41½	41½	2
45	E	CNM	HG	CI	5.00	80	1.25x3.87	4	1040	10	97	1045	N	2.37x2.50	3	2.50x2.50	2.62x3.50	abceg	⅞-18	Sch	1	1125	24¼	44	41½	3
45	E	CNM	HG	CI	5 50	104	1.25x4.25	4	1040	12	116	1045	N	2.37x2.87	3	2.25x2.96	2.75x4.00	abceg	⅞-18	Sch	1¼	1110	24½	57½	45	4
45	E	CNM	HG	CI	10.00	522	2.18x6.68	4	1045	20½	656	3140	N	3.50x4.37	5	3.50x5.21	3.50x6.37	abdeg	⅞-18	Zen	2	4600	38½	68¼	72	5
45	E	CNM	HG	CI	10.25	572	2.18x7.18	4	1045	20½	656	3140	N	3.50x4.37	5	3.50x5.21	3.50x6.37	abdeg	⅞-18	Zen	2	.....	38½	68¼	72	6
45	E	CNM	HG	CI	10.25	598	2.18x7.18	4	1045	20½	656	3140	N	3.50x4.37	5	3.50x5.21	3.50x6.37	abdeg	⅞-18	Zen	2	4700	38½	68¼	72	7
45	E	CNM	HG	CI	10.00	522	2.18x6.68	4	1045	20½	624	1045	N	3.81x4.25	7	4.00x5.21	4.00x6.37	abdeg	⅞-18	Zen(2)	1¾	6500	37½	74	97	8
45	E	CNM	HG	CI	10.25	568	2.18x7.18	4	1045	20½	624	1045	N	3.81x4.25	7	4.00x5.21	4.00x6.37	abdeg	⅞-18	Zen(2)	1¾	6600	37½	74	97	9
45	E	CNM	HG	CI	10.25	598	2.18x7.18	4	1045	20½	624	1045	N	3.81x4.25	7	4.00x5.21	4.00x6.37	abdeg	⅞-18	Zen(2)	1¾	6650	37½	74	97	10
30	N	.....	HG	Al	.....	.....	1.37x4.50	6	3135	15½	180	CNS	N	2.56x3.16	5	2.56x3.48	2.56x4.25	abcde	18 mm	Sho(2)	2	2950	32⅝	54⅞	78⅞	11
30	N	.....	HG	Al	.....	182	1.25x6.18	5	3135	17 5/16	212	CNS	N	2.56x3.16	5	2.56x3.48	2.56x4.25	abcde	18 mm	Hol	1½	2450	32⅝	49½	78⅞	12
30	N	.....	HG	Al	.....	140	1.37x5.62	5	3135	15½	184	CNS	N	2.56x3.15	7	2.56x1.50	2.56x4.25	abcde	18 mm	Str	2	2400	27⅞	51⅞	96¼	13
30	N	.....	HG	Al	.....	.....	1.37x4.50	6	3135	15½	180	CNS	N	2.56x3.16	7	2.56x3.48	2.56x4.25	abcde	18 mm	Sho(3)	2	3800	32⅝	54⅞	99⅞	14
30	N	.....	HG	Al	.....	182	1.25x6.18	5	3135	17 5/16	212	CNS	N	2.56x3.16	7	2.56x3.48	2.56x4.25	abcde	18 mm	Zen(2)	1½	3050	32⅝	49½	98⅞	15
30	N	.....	HG	Al	.....	.....	1.37x4.50	6	3135	15½	180	CNS	N	2.56x3.16	7	2.56x3.48	2.56x4.25	abcde	18 mm	Sho(3)	2½	4050	35	52¼	98⅞	16
45	E	SA	Ch	Alt	3.68	19	.859x2.62	4	T-1335	7 15/16	31	1040	Y	1.93x1.00	4	2.25x1.23	2.25x1.87	abce	14 mm	Car	1½	476	19⅞	29 11/16	32 5/32	17
45	.....	.....	SG	CI	3.50	.....	.718x3.00	3	AS	.....	.....	CS	Y	1.37x1.50	2	1.37x2.62	1.37x2.25	Splash	⅞-18	Zen	¾	130	11½	14½	13½	18
45	.....	.....	SG	CI	4.56	.....	1.84x3.75	4	CS	.....	.....	CS	Y	1.50x2.00	2‡	.....	.....	Splash	⅞-18	Zen	1	245§	16	17⅝	21⅝	19
45	.....	.....	HG	CI	5.50	.....	1.09x4.50	4	.....	.....	.....	CS	Y	1.75x2.50	2	1.62x4.25	1.62x4.12	Splash	⅞-18	Zen	.....	400§	17	22½	24½	20
45	.....	.....	SG	CI	6.50	.....	1.21x5.00	4	CS	.....	.....	CS	Y	1.87x2.81	2	1.87x5.25	1.87x5.00	Splash	⅞-18	.....	.....	610	20	24¼	44⅜	21
.....	.....	.....	HG	Al	.....	.....	.625x	4	Al	.....	.....	CS	.....	.....	2‡	1.25x1.25	1.25x1.25	Splash	14 mm	Zen	.....	145	13	17½	18¼	22
.....	.....	.....	HG	CI	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	2	2.00x	2.00x	ab	.....	Zen	.....	375§	20	19¾	28½	23
45	.....	.....	SG	CI	4.56	.....	1.84x3.75	4	.....	.....	.....	CS	Y	1.50x2.00	3	1.37x4.00	1.37x4.00	Splash	⅞-18	Zen	1	540§	16	17⅝	42	24
45	.....	.....	HG	CI	5.50	.....	1.09x4.50	4	CS	.....	.....	CS	Y	2.25x2.25	3	2.25x5.00	2.25x5.00	Splash	⅞-18	Str	1¼	900	20	24	47¾	25
45	.....	.....	HG	CI	7.00	.....	1.21x5.25	4	CS	.....	.....	CS	Y	2.37x2.81	3	2.37x4.00	2.37x4.00	Splash	⅞-18	Str	1¼	1200	21¾	25½	52 1/16	26
45	.....	.....	SG	CI	8.00	.....	1.59x6.25	4	CS	.....	.....	CS	Y	2.37x2.37	3	2.37x5.00	2.37x5.00	Splash	⅞-18	Str	1½	1850	23½	30½	63	27
45	.....	.....	SG	CI	9.87	.....	2.00x7.25	5	CS	.....	.....	CS	N	3.00x3.25	5	2.75x6.00	2.18x5.50	ML	⅞-18	.....	.....	4600	28¼	96½	37	28
45	E	.....	Ch	Al	4.00	23	.983x2.90	4	1040	10½	.....	1045	N	2.18x1.28	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1¼	.....	.....	.....	.....	29
45	E	.....	Ch	Al	4.00	26	.983x3.02	4	1040	10½	.....	1045	N	2.18x1.28	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1¼	.....	.....	.....	.....	30
45	E	.....	Ch	Al	4.00	26	.983x3.02	4	1040	10½	.....	1045	Y	2.18x1.28	7	2.62x1.94	2.62x2.47	abcde	14 mm	Zen	1½	.....	.....	.....	.....	31
45	E	.....	Ch	Al	4.50	29	.983x3.13	4	1040	10½	.....	1045	Y	2.18x1.28	7	2.62x1.94	2.62x2.47	abcd	14 mm	Zen	1½	.....	.....	.....	.....	32
30	E	.....	Ch	Al	5.31	.....	1.25x3.43	4	1040	9	.....	1045	N	2.37x1.59	7	2.62x1.71	2.62x2.50	abc	14 mm	Zen	1½	.....	.....	.....	.....	33
30	.....	.....	HG	CI	3.06	29	.750x2.81	3	3140	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abr	⅞-18	Zen	1¼	410§	15½	21¾	32⅜	34
30	.....	.....	HG	Al	3.06	.....	.750x2.81	3	AS	6 9/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	abr	⅞-18	Zen	1¼	410§	15½	21¾	32⅜	35
45	.....	.....	HG	Al	4.25	33	1.12x3.25	4	Dur	10½	41	NS	N	2.18x1.87	3	2.25x2.62	2.25x2.62	abc	18 mm	Str	1¼	660§	23	28 13/16	45¼	36
30	.....	.....	HG	Al	3.50	.....	.875x2.90	4	CS	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abr	14 mm	Zen	1½	675§	21	22½	41⅛	37
30	.....	.....	HG	Al	3.50	.....	.875x2.90	4	CS	7	26	CS‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	abr	14 mm	Zen	1½	675§	21	22½	41⅛	38
45	.....	.....	HG	Al	4.25	33	1.12x3.25	4	Dur	10½	41	NS	Y	2.18x1.87	4	2.25x2.62	2.25x2.62	abc	18 mm	Zen	1½	900§	19¾	29 1/16	56½	39
45	.....	.....	HG	Al	4.18	40	1.00x3.51	4	1035	8	37	1045	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abr	⅞-18	Zen	1¾	860§	21	31⅞	49¾	40
45	.....	.....	HG	Al	4.18	40	1.00x3.51	4	1035	8	37	1045	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abr	⅞-18	Zen	1¾	860§	21	31⅞	49¾	41
45	.....	.....	HG	Al	5.12	49	1.25x3.68	4	AS	10⅞	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Hol	2	1050§	27¾	32 5/16	56¾	42
45	.....	.....	HG	Al	5.12	49	1.25x3.68	4	AS	10⅞	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Str	2	1050§	24¾	29⅜	56¾	43
45	.....	.....	HG	Al	5.12	50	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	1½	1295§	26¼	39 9/16	66	44
45	.....	.....	HG	Al	5.12	50	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Sch	1½	1295§	33½	33 7/16	66	45
45	.....	.....	HG	Al	5.12	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	2	1295§	26¼	36 9/16	66	46
45	.....	.....	HG	Al	5.12	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Sch	1½	1295§	33½	33 7/16	66	47
45	.....	.....	HG	Al	5.37	62	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Hol	2	1295§	26¼	36 9/16	66	48
45	.....	.....	HG	Al	5.37	62	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	ab	18 mm	Sch	1½	1295§	33½	33 7/16	66	49
45	.....	.....	HG	Al	5.12	56	1.37x4.00	4	AS	11¼	85	CS	Y	2.87x2.25	4	3.00x3.00	3.00x3.62	abr	18 mm	Zen(2)	2	1175§	25	23⅜	66	50
45	.....	.....	HG	Al	5.12	56	1.37x4.00	4	AS	11¼	85	CS	Y	2.87x2.25	4	3.00x3.00	3.00x3.62	abr	18 mm	Zen(2)	2	1175§	25	23⅜	66	51
45	Bo	Tun	HG	Al	.....	.....	.750x2.84	3	AS	7	17	CS	Y	2.00x1.75	3	2.50x1.37	2.00x1.96	abc	18 mm	Str(2)	1	660§	23½	31⅛	42⅝	52
45	Bo	Tun	HG	CAS	.....	.....	.750x2.84	3	DFS	7	18	.....	Y	2.14x1.75	3	2.50x1.37	2.00x1.96	abc	14 mm	Hol	1	700§	23½	31⅜	43 5/16	53
45	Bo	Tun	HG	CAS	3.27	15	.750x2.48	3	DFS	7 13/32	22	CAS	Y	2.12x1.57	4	2.40x1.83	2.40x2.25	abc	14 mm	Str	1	.....	25⅜	29⅞	49 13/16	54
45	.....	.....	HG	Al	5.12	49	1.25x3.68	4	AS	10⅞	164φ	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Hol	2	1700§	35	33¾	58½	55
45	.....	.....	HG	Al	5.12	49	1.25x3.68	4	AS	10⅞	164φ	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	abc	18 mm	Hol	2	1700§	33¼	30 11/16	58½	56
.....	.....	.....	.....	Ala	7.25	20	.850x.....	3	AS	7⅜	.....	AS	Y	1.50x1.87	2‡	.....	.....	b	14 mm	Op	1	100	12	22	18	57
.....	.....	.....	.....	Ala	7.25	20	.850x.....	3	AS	7⅜	.....	AS	Y	1.50x1.87	2‡	.....	.....	b	14 mm	Op	1	180	20	20	22	58
.....	.....	.....	.....	Ala	7.25	20	.850x.....	3	AS	7⅜	.....	AS	Y	1.50x1.87	2‡	.....	.....	b	14 mm	Op	1	.....	12	22	18	59
.....	.....	.....	HG	Al	.....	.....	.....	.....	.....	.....	.....	.....	Y	.....	.....	.....	.....	abde	14 mm	Str	1¼	1150	23¾	17¼	54 9/16	60
45	N	.....	HG	CI	6.25	.....	1.37x5.37	4	AS	15½	.....	Spec	N	2.62x3.00	7	2.62x3.00	2.62x3.00	abde	⅞-18	Str(2)	2	2100§	28	30	88 1/16	61
45	N	.....	HG	Al	.....	.....	1.37x5.37	6	AS	15½	.....	Spec	Y	2.62x3.00	7	2.62x3.00	2.62x3.00	abde	⅞-18	Str(2)	2	2100§	28	30	88 1/16	62
45	N	.....	HG	CI	7.00	.....	1.87x5.50	4	AS	19	.....	Spec	N	3.50x4.12	7	3.50x4.12	3.50x4.12	abde	⅞-18	Str(2)	2	4000§	34	42	117 7/16	63
45	.....	.....	HG	CI	6.00	140	1.25x5.12	4	CS	12½	96	CNS	Y	2.25x2.62	3	2.25x4.62	2.25x4.75	Splash	½	Sch	1½	1100	24	36½	53⅞	64
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1½	1400	27½	33½	71¾	65
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1½	1400	27½	33½	71¾	66
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1½	1850	27½	33½	71¾	67
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1¾	1400	27½	33½	71¾	68
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1½	2000	27 7/16	23	81 1/16	69
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1¾	2000	27½	33½	71¾	70
45	.....	.....	HG	Al	5.50	94	1.43x4.37	4	CS	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdef	⅞-18	Zen(2)	1½	2000	27½	33½	71¾	71
45	.....	.....	HG	CI	6.00	140	1.25x5.12	5	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	1¾	2000	30½	36¼	87½	72
45	.....	.....	HG	CI	6.00	140	1.25x5.12	5	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	1¾	2000	30½	36¼	87½	73
45	.....	.....	HG	CI	6.00	140	1.25x5.12	5	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	1¾	2000	30½	36¼	87½	74
60	.....	.....	HG	Al	5.81	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	1¾	2250	30½	45⅛	87½	75
60	.....	.....	HG	Al	6.06	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	1¾	2000	30½	45⅛	87½	76
60	.....	.....	HG	Al	6.46	110	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	4	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	2½	2175	30½	45⅛	87½	77
60	.....	.....	HG	Al	6.06	125	1.50x5.37	4	CS	14½	224	CNS	Y	3.00x3.12	7	3.25x2.62	3.25x3.68	abcdef	⅞-18	SZ(2)	2½	4000	31	49¼	102	78
60	.....	.....	HG	Al	6.42	129	1.50x5.37	4	CS	14½	224	CNS	Y	3.00x3.12	7	3.25x2.62	3.25x3.68	abcdef	⅞-18	SZ(2)	2½	3400	31	49¼	102	79
45	.....	.....	HG	Al	8.00	280	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	7	4.00x3.37	4.00x5.50	abcdef	⅞-18	Zen(3)	2½	7100	40⅛	72¾	121⅜	80
45	.....	.....	HG	Al	8.25	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	7	4.00x3.37	4.00x5.50	abcdef	⅞-18	Zen(3)	2½	7100	40⅛	72¾	121⅜	81
45	.....	.....	HG	Al	8.93	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	7	4.00x3.37	4.00x5.50	abcdef	⅞-18	Zen(3)	2½	7100	40⅛	72¾	121⅜	82
60	.....	.....	HG	Al	5.81	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	5	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	2½	3400	30½	45⅛	104 9/16	83
60	.....	.....	HG	Al	6.06	100	1.25x5.12	3	CS	14	130	CNS	Y	2.50x3.00	5	2.50x4.43	2.50x4.43	abcdef	⅞-18	Zen(2)	2½	3400	30½	45⅛	104 9/16	84
45	.....	.....	HG	Al	8.00	280	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdef	⅞-18	Zen(4)	2½	9000	40⅛	72¾	142⅜	85
45	.....	.....	HG	Al	8.25	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdef	⅞-18	Zen(4)	2½	9000	40⅛	72¾	142⅜	86
45	.....	.....	HG	Al	8.93	290	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdef	⅞-18	Zen(4)	2½	9000	40⅛	72¾	142⅜	87
45	N	.....	HG	CI	4.12	64	1.10x3.25	3	1045	8½	43	1045	Y	1.50x2.12	2	1.50x3.00	1.50x3.00	Splash	⅞-18	Str	¾	210	19¼	22 9/16	21⅜	88
45	N	.....	HG	CI	4.12	64	1.10x3.25	3	1045	8½	43	1045	N	1.50x2.12	2	1.50x3.00	1.50x3.00	Splash	⅞-18	Str	1	415	19½	22 13/16	36¼	89
45	N	.....	HG	Al	2.37	9	.625x2.12	3	1045	6	14	1045	N	1.43x1.25	2‡	ND 1207	ND 1207	ce	14 mm	Str	¾	240	18¼	19⅛	27 7/16	90
45	N	.....	HG	CI	3.00	19	.625x2.40	3	1045	8	27	1045	N	1.75x1.50	2	1.76x2.81	1.73x2.87	ab	⅞-18	Str	1	330	15⅞	21⅛	38⅝	91
45	N	.....	HG	CI	3.50	30	.875x2.62	3	1045	7¼	29	1045	N	1.75x1.25	3	2.12x1.43	2.12x1.18	abcde	18 mm	Str	1	490	21⅜	24 3/16	35	92
45	N	.....	HG	CI	3.93	45	1.10x3.06	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x2.50	2.00x1.87	abcde	⅞-18	Str	1	610	19⅛	26¼	41	93
45	N	.....	HG	CI	4.12	64	1.10x3.25	3	1045	8½	43	1045	N	1.50x2.12	3	1.50x3.00	1.50x3.00	abe	⅞-18	Str	1	620	19½	22 13/16	46⅝	94
45	N	.....	HG	CI	4.75	69	1.10x3.56	4	1045	10⅜	66	1045	N	2.00x2.25	3	2.00x4.18	2.00x3.50	abe	⅞-18	Str	1¼	830	20¼	26 15/16	54⅜	95
45	N	.....	HG	CI	4.75	89	1.10x3.93	4	1045	10⅜	66	1045	N	2.00x2.25	3	2.00x4.18	2.00x3.50	abe	⅞-18	Str	1½	830	20¼	26 15/16	54⅜	96
45	N	.....	HG	CI	5.25	82	1.25x3.87	4	1045	11⅜	87	1045	N	2.56x2.25	5	2.56x4.25	2.56x4.25	abce	⅞-18	Str	1½	1175	22¾	27 1/16	59 5/16	97
45	N	.....	HG	CIA	6.00	126	1.43x4.68	4	1045	13¼	168	1045	N	2.56x3.00	5	2.62x4.50	2.62x4.50	abcde	⅞-18	Str	2	1720	25⅞	35½	74 1/16	98
45	N	.....	HG	CIA	6.00	150	1.43x5.25	4	1045	13¼	168	1045	N	2.56x3.00	5	2.62x4.50	2.62x4.50	abcde	⅞-18	Str	2	1730	25⅞	35½	74 1/16	99

(For abbreviations see pages 214-215)

American Stock, Marine and

Line Number	Make and Model	Designed for	Number of Cylinders, Bore and Stroke (In.)	Rated Hp. (A.M.A.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio - to 1	Maximum Torque at R.P.M. (Lb. Ft.)	Cylinders: No. Cast in One Piece	Cylinders: Liners—Type	Crankcase—Upper Half Integral with Cylinders?	Valves: Arrangement	Valves: Exhaust Head Material (S.A.E. No.)	Valves: Max. Head Diameter (In.) Intake	Valves: Max. Head Diameter (In.) Exhaust	Valves: Min. Port Diameter (In.) Intake	Valves: Min. Port Diameter (In.) Exhaust	Valves: Lift (In.) Intake	Valves: Lift (In.) Exhaust	Valves: Stem Diameter (In.) Intake	Valves: Stem Diameter (In.) Exhaust
1	Thorobred BC-Super-4	M	4-6x7	....	78-1100	791.0	4.00	465-700	2	N	Se	L	CAI	2.75	2.75	2.37	2.37	.375	.375	.621	.621
2	Thorobred Hiawatha	M	6-3¾x4¼	....	82-2800	282.0	5.70	185-1100	6	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
3	Thorobred ArrowSuper-6	M	6-4¼x4¾	....	95-2500	404.0	5.60	286-800	6	N	In	L	Sil	1.93	1.43	1.75	1.25	.375	.375	.375	.375
4	Thorobred BB-6	M	6-4½x6	....	80-1725	572.5	4.00	379-900	6	N	Se	L	Dia	2.34	2.34	2.12	2.12	.300	.300	.434	.434
5	Thorobred BBS-6	M	6-5x6	....	101-1500	707.0	4.00	420-900	6	N	Se	L	Dia	2.34	2.34	2.12	2.12	.300	.300	.434	.434
6	Thorobred BC-6	M	6-5x7	....	90-1100	825.0	4.00	451-1000	2	N	Se	L	CAI	2.75	2.75	2.37	2.37	.375	.375	.621	.621
7	Thorobred BCS-6	M	6-5¾x7	....	112-1100	1091.0	4.00	596-850	2	N	Se	L	CAI	2.75	2.75	2.37	2.37	.375	.375	.621	.621
8	Thorobred BC-Super-6	M	6-6x7	....	124-1100	1187.5	4.00	630-875	2	N	Se	L	CAI	2.75	2.75	2.37	2.37	.375	.375	.621	.621
9	Universal Fisherman-WM	M	1-4⅜x4½	....	8-1200	67.6	4.60	....	1	N	In	L	CNS	1.87	1.87	.....	.....	.250	.250	.375	.375
10	Universal Blue Jacket-AFTL	M	2-3x3½	....	10-2000	49.5	5.75	....	2	N	In	L	CNS	1.50	1.50	.....	.....	.250	.250	.375	.375
11	Universal Utility Four-BN	M	4-2¾x4	....	25-2500	95.0	5.00	....	4	N	In	L	CNS	1.12	1.12	.....	.....	.234	.234	.312	.312
12	Universal Flexifour-FA	M	4-3x3½	....	40-3500	99.0	5.00	....	4	N	In	L	Sil	1.50	1.50	.....	.....	.312	.312	.375	.375
13	Universal Superfour-LSG	M	4-3¼x4½	....	50-3000	149.3	5.70	....	4	N	Se	L	CNS	1.37	1.37	.....	.....	.312	.312	.375	.375
14	Universal American Six-AMS	M	6-3x3½	....	60-3500	148.5	6.00	....	6	N	In	L	Sil	1.50	1.50	.....	.....	.312	.312	.375	.375
15	Universal Cruiser Six-HCS	M	6-3½x4½	....	90-3000	260.0	5.75	....	6	N	Se	L	Sil	1.50	1.50	.....	.....	.312	.312	.375	.375
16	Universal Sea Lion Six-LHS	M	6-3½x4½	....	110-3400	260.0	5.75	....	6	N	Se	L	Sil	1.50	1.50	.....	.....	.312	.312	.375	.375
17	Universal Cruiser Eight-CCE	M	8-3½x4½	....	125-3000	347.0	5.75	....	8	N	Se	L	Sil	1.50	1.50	.....	.....	.328	.328	.375	.375
18	Universal Sea Lion Eight-LCE	M	8-3½x4½	....	141-3400	347.0	5.75	....	8	N	Se	L	Sil	1.50	1.50	.....	.....	.328	.328	.375	.375
19	Vimalert M-12	M	12-5x7	....	420-1900	1650.0	6.25	1286-1400	1	N	Se	I	Sil	2.73	2.73	2.25	2.25	.437	.375	.435	.435
20	Vimalert Duplex Unit	M	Note — Unit is composed of two Model M-12 Engines— Placed end to end, with a gear box between, driving one pro																		
21	Vimalert V-2500-2	M	12-6⅜x6½	....	1200-2350	2500.0	6.00	....	6	W	Se	I	CNS	2.20	2.21	1.95	1.96	.500	.500	.403	.559
22	Volcano 12-2200	Ind	1-3⅞x4⅞	....	12-2200	57.5	4.75	36-1400	1	N	Se	L	Sil	1.53	1.53	1.37	1.37	.312	.312	.312	.312
23	Volcano 24-2200	Ind	2-3⅞x4⅞	....	24-2200	115.0	4.75	72-1400	1	N	Se	L	Sil	1.53	1.53	1.37	1.37	.312	.312	.312	.312
24	Volcano 48.2200	C,T,Tr,Ind	4-3⅞x4⅞	....	48-2200	230.0	4.75	144-1400	1	N	Se	L	Sil	1.53	1.53	1.37	1.37	.312	.312	.312	.312
25	Waukesha (H)150	C, Ind	2-3x2¾	7.2	....	39.0	5.60	....	2	N	In	L	Sil	1.37	1.15	1.25	1.00	.300	.300	.312	.312
26	Waukesha ICK	T, M, Ind	4-2½x3⅛	10.0	18-2800	61.3	5.70	40-1800	4	N	In	L	Sil	1.12	.937	1.00	.937	.228	.250	.312	.312
27	Waukesha FCS	T, Tr	4-2¾x4	12.1	26-2600	94.0	4.85	67-1100	4	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
28	Waukesha FC	T, Tr, Ind	4-3¼x4	16.9	35-2600	133.5	5.58	92-1200	4	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
29	Waukesha XAH	T, Tr, Ind	4-3⅝x4½	21.0	37-2200	186.0	5.10	121-900	4	N	In	L	Sil	1.56	1.56	1.37	1.37	.281	.281	.375	.375
30	Waukesha 130-GS	T, Tr, Ind	4-3¾x5	22.5	47-1900	221.0	6.12	162-900	4	W	In	I	Sil	1.84	1.40	1.62	1.25	.445	.453	.434	.434
31	Waukesha 130-GL	T, Tr, Ind	4-4x5	25.6	53-1900	251.0	5.95	184-900	4	W	In	I	Sil	1.84	1.40	1.62	1.25	.445	.453	.434	.434
32	Waukesha VIM	Tr	4-4¼x5¼	29.0	53-1600	298.0	4.23	200-1000	4	W	In	I	Sil	2.00	1.75	1.75	1.50	.400	.400	.375	.375
33	Waukesha VIK	Tr, Ind	4-4½x5¼	34.2	58-1600	334.0	4.30	224-1000	4	W	In	I	Sil	2.00	2.00	1.75	1.75	.400	.400	.375	.375
34	Waukesha VRZ	T, Tr	4-4⅝x5¼	34.2	....	353.0	5.63	....	4	W	In	I	Sil	.....	.....	1.75	1.50	.....	.....	.....	.....
35	Waukesha CHK	Tr, Ind	4-5⅛x6¼	42.0	79-1400	516.0	4.20	375-800	4	W	In	I	Sil	2.37	2.37	2.12	2.12	.437	.437	.437	.437
36	Waukesha HL	Tr, Ind	4-6x6½	57.6	91-1200	735.0	3.80	419-700	2	N	Se	L	Sil	2.40	2.15	2.12	1.87	.500	.500	.437	.437
37	Waukesha WK	Ind	4-6¾x8	73.0	120-950	1145.0	4.00	762-600	2	N	Se	L	Sil	3.00	3.00	2.75	2.75	.500	.500	.562	.562
38	Waukesha WOK	Ind	4-7½x8	90.0	163-950	1414.0	4.16	950-700	4	N	Se	I	Sil	3.25	2.75	3.00	2.50	.756	.756	.562	.562
39	Waukesha 6BM	T, B	6-3⅝x4¼	31.5	77-2800	263.0	5.70	176-1100	6	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
40	Waukesha 6BK	T, B, Ind	6-3¾x4¼	33.8	82-2800	282.0	5.70	185-1100	6	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
41	Waukesha 6BZ	T, B, Ind	6-4x4¼	38.4	85-2800	320.0	5.75	210-1200	6	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
42	Waukesha 6MKR	T, B, Ind	6-4⅛x4¾	40.8	90-2500	381.0	5.34	270-800	6	N	In	L	Sil	1.93	1.43	1.75	1.25	.375	.375	.375	.375
43	Waukesha 6MZR	T, B, Ind	6-4¼x4¾	41.0	95-2500	404.0	5.38	286-800	6	N	In	L	Sil	1.93	1.43	1.75	1.25	.375	.375	375	.375
44	Waukesha 140-GS	T, B, Ind	6-4¼x5½	43.4	122-2200	468.0	5.78	360-1000	6	W	In	I	Sil	2.12	1.56	1.87	1.37	.531	.469	.434	.434
45	Waukesha 6SRLR	T, B, Ind	6-4⅜x5⅛	46.0	114-2250	462.0	5.50	307-600	6	N	Se	L	Sil	1.90	1.65	1.56	1.37	.386	.375	.375	.375
46	Waukesha 140-GK	T, B, Ind	6-4½x5½	48.6	137-2200	525.0	5.78	406-1000	6	W	In	I	Sil	2.12	1.56	1.87	1.37	.531	.469	.434	.434
47	Waukesha 6SRKR	T, B, Ind	6-4⅝x5⅛	51.3	125-2250	517.0	5.50	368-600	6	N	Se	L	Sil	1.90	1.65	1.56	1.37	.386	.375	.375	.375
48	Waukesha 145-GS	T, B, Ind	6-4¾x6	54.2	138-1800	638.0	5.63	506-800	6	W	In	I	Sil	2.12	1.62	1.87	1.37	.594	.531	.495	.495
49	Waukesha 6GAL	T, B, Ind	6-5x5½	60.0	136-2000	648.0	5.00	468-700	6	D	In	I	Sil	2.21	1.75	2.00	1.50	.500	.500	.437	.437
50	Waukesha 6RBR	T, B	6-5x5¾	60.0	150-2000	677.0	5.35	490-800	6	N	Se	L	Sil	2.40	2.40	2.12	2.12	.400	.400	.437	.437
51	Waukesha 145-GK	T, B, Ind	6-5¼x6	66.2	168-1800	779.0	5.63	620-800	6	W	In	I	Sil	2.12	1.62	1.87	1.37	.594	.531	.495	.495
52	Waukesha 6GSK	T, B, Ind	6-5½x5½	72.5	155-2200	784.0	4.80	567-700	6	D	In	I	Sil	2.21	1.75	2.00	1.50	.500	.500	.437	.437
53	Waukesha 6WAL	T, B, Ind	6-5¾x6½	79.5	172-1800	1013.0	5.00	685-600	6	W	In	I	Sil	2.65	2.22	2.43	2.00	.656	.656	.500	.500
54	Waukesha 6WAK	T, B, Ind	6-6¼x6½	94.0	202-1800	1196.0	5.00	810-600	6	W	In	I	Sil	2.65	2.22	2.37	2.00	.656	.656	.500	.500
55	Waukesha 6EL	Ind	6-6½x7	118.0	165-1125	1395.0	4.00	1000-550	6	W	In	I	Sil	2.75	2.50	2.50	2.25	.718	.718	.562	.562
56	Waukesha 6EK	Ind	6-7x7	137.0	190-1125	1616.0	4.00	1120-550	6	W	In	I	Sil	2.75	2.50	2.50	2.25	.718	.718	.562	.562
57	Waukesha 6NK	Ind	6-7x8½	137.0	220-1050	1962.0	5.50	1330-600	6	W	In	I	Sil	2.75	2.50	2.50	2.25	.718	.718	.562	.562
58	Waukesha 6LS	Ind	6-7x8½	137.0	240-1050	1962.0	3.80	1310-720	3	N	Se	L	Sil	3.00	2.75	2.75	2.50	.740	.825	.562	.562
59	Waukesha 6LK	Ind	6-7¾x8½	144.0	291-1050	2406.0	3.70	1610-700	3	N	Se	I	Sil	3.00	2.75	2.75	2.50	.740	.825	.562	.562
60	Waukesha 6LRO	Ind	6-8½x8½	173.4	343-1050	2894.0	3.80	1860-700	3	W	Se	I	Sil	3.50	3.00	3.25	.275	.750	.840	.562	.562
61	White 250	T, B	6-3 7/16x4½	28.4	76-3000	250.6	6.13	175-1200	6	N	In	L	AUS	1.69	1.62	1.50	1.37	.396	.396	.375	.375
62	White 270	T, B	6-3 9/16x4½	30.4	91-2900	270.0	5.88	200-1200	6	N	In	L	AUS	1.69	1.62	1.50	1.37	.396	.396	.406	.406
63	White 264	T	6-3⅝x4¼	31.5	78-2600	264.0	6.11	187-1000	6	N	In	L	Sil	1.75	1.62	1.50	1.37	.356	.356	.375	.375
64	White 318	T, B	6-3⅞x4½	36.0	110-3000	318.0	6.30	245-1300	6	N	In	L	AUS	1.66	1.69	1.50	1.37	.396	.396	.375	.375
65	White 362	T, B	6-3⅞x5⅛	36.0	116-2900	362.0	5.88	280-1200	6	N	In	L	AUS	1.66	1.69	1.43	1.50	.381	.381	.406	.406
66	White 460	T, B	6-4 5/16x5¼	44.6	123-2400	460.0	5.00	320-1000	6	N	Se	I	CNT	2.13	2.03	1.87	1.75	.381	.381	.437	.437
67	White 529	T	6-4⅝x5¼	51.3	134-2400	529.0	5.00	390-1000	6	N	Se	I	CNT	2.13	2.03	1.87	1.81	.381	.381	.437	.500
68	White (H)681	B	12-4⅛x4¼	81.7	210-3000	681.0	5.88	500-1200	12	D	In	L	AUS	1.85	1.75	1.62	1.62	.381	.381	.401	.401
69	Willys 440	C, T	4-3⅛x4⅜	15.6	61-3600	134.2	6.48	109-2200	4	N	In	L	2112	1.53	1.46	1.34	1.28	.359	.359	.373	.373
70	Wisconsin AA	M, Ind	1-2¼x2¾	2.0	1.8-2600	10.9	4.40	4.2-2000	1	N	In	L	AUS	1.12	1.12	.875	.875	.187	.187	.310	.310
71	Wisconsin AB	Ind	1-2½x2¾	2.5	3-2600	13.5	4.40	6.8-1800	1	N	In	L	AUS	1.12	1.12	.875	.875	.187	.187	.310	.310
72	Wisconsin AD	Ind	1-2¾x3¼	3.0	4.3-2600	19.3	4.20	10-1600	1	N	Se	L	Sil	1.31	1.31	.687	.875	.275	.275	.310	.310
73	Wisconsin AK	Ind	1-2⅞x2¾	3.3	4.2-2400	17.8	4.59	9.5-1700	1	N	In	L	AUS	1.12	1.12	.937	.937	.187	.187	.310	.310
74	Wisconsin AE	M, Tr, Ind	1-3x3¼	3.6	4.7-2400	22.9	4.13	11.8-1600	1	N	Se	L	Sil	1.31	1.31	.687	.875	.275	.275	.310	.310
75	Wisconsin AF	M, Tr, Ind	1-3¼x4	4.2	5.4-2000	33.1	3.71	16.9-1200	1	N	Se	L	Sil	1.56	1.56	.812	1.25	.275	.275	.310	.310
76	Wisconsin AG	M, Tr, Ind	1-3½x4	4.9	6.2-2000	38.5	3.72	19.6-1200	1	N	Se	L	Sil	1.56	1.56	.812	1.25	.275	.275	.310	.310
77	Wisconsin AH	M, Tr, Ind	1-3⅝x4	5.2	8.2-2200	41.3	4.18	23.7-1400	1	N	Se	L	Sil	1.56	1.56	.812	1.25	.275	.275	.310	.310
78	Wisconsin AC-4	M, Tr, Ind	4-2⅝x3¼	11.0	16-2600	70.4	4.60	39.5-1600	4	N	Se	I	Sil	1.12	1.12	.937	.937	.232	.232	.310	.310
79	Wisconsin AM-4	Tr, Ind	4-3¼x4	16.9	25-2200	132.0	4.56	79-1300	4	N	Se	I	Sil	1.50	1.37	1.12	1.12	.276	.256	.310	.310
80	Wisconsin AP-4	Tr, Ind	4-3½x4	19.5	32-2100	154.0	4.60	94-1100	4	N	Se	I	Sil	1.50	1.37	1.12	1.12	.276	.256	.310	.310
81	Wisconsin SU	T, Tr, Ind	4-4x5	25.6	38-1600	251.0	4.20	160-1000	4	N	In	I	AUS	1.50	1.50	1.68	1.68	.438	.379	.375	.375
82	Wisconsin X	T, Tr, Ind	4-4½x5	32.4	66-1900	318.0	4.25	224-1000	4	N	In	I	Sil	2.00	2.00	1.81	1.81	.384	.393	.437	.437
83	Wisconsin GA-2	T, Tr, Ind	6-3¾x5	33.7	49-1600	331.0	4.50	211-700	6	N	In	I	Sil	1.71	1.71	1.50	1.50	.379	.379	.375	.375
84	Wisconsin L-2	T, Tr, Ind	6-3⅞x5	36.0	62-1800	354.0	4.27	236-700	6	N	In	I	Sil	2.00	2.00	1.75	1.75	.379	.379	.434	.434
85	Wisconsin L-3	T, Tr, Ind	6-4⅛x5	40.7	68-1800	401.0	4.30	260-700	6	N	In	I	AUS	2.00	2.00	1.62	1.62	.379	.379	.434	.434
86	Wisconsin L-4	T, Tr, Ind	6-4¼x5	43.4	71-1800	426.0	4.26	280-700	6	N	In	I	AUS	2.00	2.00	1.62	1.62	.379	.379	.434	.434
87	Wisconsin ZA-1	Tr. Ind	6-4½x5	48.6	78-1600	477.0	4.50	322-800	6	N	Se	I	Sil	2.25	2.25	2.06	2.06	.450	.450	.437	.437
88	Wisconsin ZA-2	T, Tr, Ind	6-4⅝x5	.....	82-1600	504.0	4.88	340-750	6	N	In	I	AUS	2.25	2.25	1.56	1.56	.450	.450	.434	.434

ABBREVIATIONS

§—Weight complete with ignition and carburetor
**—Pressure also to Camshaft thrust bearing
■—Also available in reduction gear models
▼—Also available in R. H. rotation
†—Tocco hardened
♣—Ball or Roller bearings used
‡—Cast Iron pistons also supplied
φ—Weight per pair

(1)—6.15 Ratio for Cars, 5.81 for Trucks
(2)—Two used (3)—Three used (4)—Four used
(5)—155 ft. lb. torque at 2200 for Cars; 150 ft. lb. at 2000 for Trucks
(6)—Minneapolis-Moline Power Implement
(7)—Also built in 4 and 6 cylinder models
(8)—Also built in 4 cylinder model
a—Main Bearings
(aa)—Forked Rod, 88 oz.; Plain Rod, 50 oz.
AI—Alloy Iron **Al**—Aluminum Alloy
Ala—Aluminum Alloy, Anodized

Als—Aluminum Alloy with Steel Strut
Alt—Aluminum Alloy, Tin plated
AS—Alloy Steel **AUS**—Austenitic Steel
b—Connecting Rod Bearings **B**—Buses
BG—Bevel Gear
Bo—Used in both Intake and Exhaust seats
c—Camshaft Bearings **C**—Cars
CAI—Chrome Aluminum
Car—Carter Carburetor
CAS—Cast Alloy Steel
CG—Chandler-Groves Carburetor

Ch—Chain
CHS—Chrome Nickel Silicon Steel
CI—Cast Iron
CIA—Cast Iron, Anodized
CNI—Chrome Nickel Iron
CNM—Chrome Nickel Molybdenum
CNS—Chrome Nickel Steel
CNT—Chrome Nickel Steel with Tungsten
CS—Carbon Steel **CT**—Cast Iron, Tin plated
CV—Chrome Vanadium
d—Wrist Pins **D**—Dry Liners

Commercial Vehicle Engines—*Continued*

Valves: Angle (Deg.)	Valves: Seats: Inserts Used?	Valves: Seats: Insert Material (S.A.E. No.)	Front End Drive—Type	Pistons: Material	Pistons: Length (In.)	Pistons: Weight with Pins, Rings Bushings (Oz.)	Pistons: Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Connecting Rods: Material	Connecting Rods: Center to Center Length (In.)	Connecting Rods: Weight with Bushing and Cap (Oz.)	Crankshaft: Material	Crankshaft: Counterbalance Used?	Crankshaft: Crank-Pin: Diameter and Length (In.)	Crankshaft: Main Bearings: Number	Crankshaft: Main Bearings: Diameter and Length (In.): Front	Crankshaft: Main Bearings: Diameter and Length (In.): Rear	Oil Pressure To—	Spark Plug—Thread Size	Carburetor: Make	Carburetor: Size	Engine Weight without Carburetor or Ignition (Lb.)	Overall Dimensions (In.): Width	Overall Dimensions (In.): Height	Overall Dimensions (In.): Length	Line Number
45	N	.....	HG	CIA	6.00	190	1.43x5.50	4	1045	13¼	168	1045	N	2.56x3.00	5	2.62x4.50	2.62x4.50	abcde	⅞-18	Str	2	1740	25⅞	35½	74 1/16	1
45	N	.....	HG	Al	4.37	37	1.00x3.00	4	1045	8	40	1045	N	2.00x1.50	7	2.62x2.00	2.62x1.25	abcde	18 mm	Str	1¼	1000	22½	28¼	53 13/16	2
45	E	.....	HG	CI	4.37	78	1.00x4.00	4	1045	8¾	48	1045	N	2.25x1.50	7	2.62x2.75	2.62x1.62	abcde	14 mm	Str	1¼	1185	20¼	27⅞	57 15/16	3
45	N	.....	HG	CIA	5.25	82	1.25x3.87	4	1045	11⅜	87	1045	N	2.56x2.25	7	2.56x4.25	2.56x4.25	abce	⅞-18	Str	1½	1475	33⅜	30 9/16	72 9/16	4
45	N	.....	HG	CIA	5.25	106	1.25x4.31	4	1045	11⅜	87	1045	N	2.56x2.25	7	2.56x4.25	2.56x4.25	abce	⅞-18	Str	2	1565	24⅛	30 9/16	72¾	5
45	N	.....	HG	CIA	6.00	126	1.43x4.68	4	1045	13¼	168	1045	N	2.56x3.00	7	2.62x4.50	2.62x4.50	abcde	⅞-18	Str	2	2330	27⅛	35½	91⅜	6
45	N	.....	HG	CIA	6.00	150	1.43x5.25	4	1045	13¼	168	1045	N	2.56x3.00	7	2.62x4.50	2.62x4.50	abcde	⅞-18	Str	2	2360	27⅛	35½	91⅜	7
45	N	.....	HG	CIA	6.00	190	1.43x5.50	4	1045	13¼	168	1045	N	2.56x3.00	7	2.62x4.50	2.62x4.50	abcde	⅞-18	Str	2	2380	27⅛	35½	91⅜	8
45	N	.....	HG	CI	4.65	....	1.00x3.75	3	Dur	8½	....	CS	Y	2.00x2.00	2	2.00x2.00	2.00x2.00	Splash	⅞-18	Str	⅝	200	15 3/16	24⅜	17 3/16	9
45	N	.....	HG	Al	3.25	....	.750x2.56	4	CS	7¼	....	CS	Y	1.75x1.37	2	1.75x1.87	1.75x2.00	abc	18 mm	Str	⅝	300	20 7/16	22⅝	28⅛	10
45	N	.....	HG	CI	3.25	....	.625x2.44	3	CS	7½	....	CS	N	1.50x1.75	2	1.50x2.75	1.50x2.75	abc	18 mm	Zen	1	347	17 5/16	21 7/16	34 13/16	11
45	N	.....	HG	Al	3.25	15	.750x2.56	4	Dur	7¼	18	CS	Y	1.75x1.37	3	1.75x2.50	1.75x2.50	abcde	18 mm	Zen	1	400	20⅛	22 11/16	34 13/16	12
45	N	.....	HG	Al	3.50	20	.875x2.75	4	Dur	8½	30	CS	N	2.00x1.75	3	2.00x2.50	2.00x2.50	abc	18 mm	Zen	1	520	18½	25¼	39⅝	13
45	N	.....	HG	Al	3.25	15	.750x2.56	4	Dur	7¼	18	CS	Y	1.75x1.37	4	1.75x2.50	1.75x2.50	abcde	18 mm	Zen	1¼	515	24	20¾	43⅞	14
45	N	.....	HG	Al	3.87	28	.875x3.00	4	Dur	8½	28	CS	N	2.00x1.87	7	2.00x2.56	2.00x2.56	abc	18 mm	Str	1¼	775	20 1/16	26¾	49 15/16	15
45	N	.....	HG	Al	3.87	28	.875x3.00	4	Dur	8½	28	CS	N	2.00x1.87	7	2.00x2.56	2.00x2.56	abc	18 mm	Str	1¼	810	22 3/16	26¾	49 15/16	16
45	N	.....	HG	Al	3.87	28	.875x3.00	4	CS	8½	28	CS	N	2.00x1.87	9	2.00x2.56	2.00x2.56	abc	18 mm	Str	1¾	1050	21 9/16	26 3/16	62⅝	17
45	N	.....	HG	Al	3.87	28	.875x3.00	4	CS	8½	28	CS	N	2.00x1.87	9	2.00x2.56	2.00x2.56	abc	18 mm	Str(2)	1½	1100	22¾	26 3/16	62⅝	18
30	E	CNS	.....	Ala	4.65	76	1.25x4.18	5	AS	12	(aa)	AS	N	2.37x2.50	7	2.62x4.62	2.62x2.00	abc	18 mm	Zen	2	1920	32¼	40¾	90¼	19
pel	ler s	haft.	—800	H. P.	—We	ight	5400 lbs.																			20
45	Bo	CNS	.....	Al	4.59	88	1.62x5.90	5	4340	12	228	4140	Y	3.50x2.87	7	4.00x3.00	4.00x3.00	abce	18 mm	Str	2¾	3490	49	50	101	21
45	N	.....	HG	Al	3.84	28	1.00x3.18	4	AS	7½	29	CAS	Y	1.87x1.62	2♦	BT22168	BT22325	Splash	14 mm	Zen	1	160	....	....	....	22
45	N	.....	HG	Al	3.84	28	1.00x3.18	4	AS	7½	29	CAS	Y	1.87x1.62	3♦	BT22168	BT22325	Splash	14 mm	Zen	1¼	250	....	....	....	23
45	N	.....	HG	Al	3.84	28	1.00x3.18	4	AS	7½	29	CAS	Y	1.87x1.62	3♦	BT22168	BT22325	Splash	14 mm	Zen	1¼	340	....	....	....	24
45	N	.....	HG	Al	2.62	12	.625x2.62	4	1045	4⅝	12	1045	Y	1.50x1.00	2	1.50x1.00	2.25x2.31	abce	14 mm	Op	⅝	125	20¾	14½	15⅜	25
45	N	.....	HG	CI	2.34	9	.625x2.12	3	1045	6	14	1045	N	1.56x1.25	2♦	ND1207	ND1207	abcde	14 mm	Op	⅝	143	14 15/16	20½	21 13/16	26
45	N	.....	HG	CI	3.25	26	.875x2.25	3	1045	7¼	29	1045	N	1.75x1.06	3	2.12x1.18	2.12x1.43	abcde	18 mm	Op	1	280	19	26¾	37⅜	27
45	N	.....	HG	CI	3.50	30	.875x2.75	3	1045	7¼	29	1045	N	1.75x1.06	3	2.12x1.18	2.12x1.43	abcde	18 mm	Op	1	290	19	26¾	37⅜	28
45	E	Al	HG	CI	3.93	45	1.12x3.03	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x1.87	2.00x2.50	abcde	⅞-18	Op	1	385	17⅞	27	32¼	29
(h)	E	Al	HG	CI	5.12	58	1.12x3.06	4	1045	8¾	57	Pro	N	2.25x1.75	3	2.62x1.75	2.62x2.25	abcdeg	18 mm	Op	1¼	670	21½	38¾	33 9/16	30
(h)	E	Al	HG	CI	5.12	....	1.12x3.31	4	1045	8¾	57	Pro	N	2.25x1.75	3	2.62x1.75	2.62x2.25	abcdeg	18 mm	Op	1¼	680	21½	38¾	33 9/16	31
45	E	Al	HG	CI	4.87	76	1.31x3.87	4	1045	10½	86	1045	N	2.37x2.12	3	2.37x2.12	2.37x2.75	abcdeg	⅞-18	Op	1¼	870	21¼	35	39	32
45	E	Al	HG	CI	4.87	85	1.31x4.06	4	1045	10½	86	1045	N	2.37x2.12	3	2.37x2.12	2.37x2.75	abcdeg	⅞-18	Op	1¼	925	21¼	35	39	33
....	E	Al	HG	CI	5.96	96	1.31x4.06	4	1045	10½	....	1045	N	2.37x2.12	3	2.37x2.31	2.37x2.75	abcdeg	18 mm	Op	1¼	920	....	....	39 9/16	34
45	E	Al	HG	CI	5.87	132	1.50x4.48	4	1045	11¾	141	1045	N	2.75x2.50	3	3.00x2.87	3.00x3.56	abcdeg	⅞-18	Op	1½	1600	24	42	46⅛	35
45	N	.....	HG	CI	6.53	178	1.37x5.25	4	1045	13¼	146	1045	N	2.75x2.50	3	3.00x3.00	3.00x3.56	abcde	⅞-18	Op	1¾	1600	24⅜	45 5/16	62	36
30	N	.....	HG	CI	7.50	370	1.56x6.00	4	1045	18	278	1045	N	3.25x2.75	5	3.75x3.75	3.75x5.50	abcde	⅞-18	Op	2	2750	34	51¾	59 7/16	37
30	E	Al	HG	CI	8.68	447	2.00x6.75	4	1045	18	278	1045	N	3.25x2.75	5	3.75x3.75	3.75x5.50	abcdeg	⅞-18	Op	2½	3560	34¾	63½	59 7/16	38
45	E	Al	HG	Al	4.43	34	1.00x3.25	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1¼	685	26	31	39½	39
45	E	Al	HG	Al	4.37	37	1.00x3.50	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1½	690	28	31	39½	40
45	E	Al	HG	Al	4.37	46	1.00x3.85	4	1045	8	40	1045	N	2.00x1.50	7	2.62x1.25	2.62x2.00	abcde	18 mm	Op	1½	706	26	31	39½	41
45	E	Al	HG	Al	4.37	45	1.00x3.85	4	1045	8¾	45	1045	N	2.25x1.50	7	2.62x1.62	2.62x2.75	abcde	18 mm	Op	1½	890	20½	31	43 11/16	42
45	E	Al	HG	Al	4.37	48	1.00x4.00	4	1045	8¾	48	1045	N	2.25x1.50	7	2.62x1.62	2.62x2.75	abcde	18 mm	Op	1½	920	20½	31	43 11/16	43
(h)	E	Al	HG	CI	6.50	....	1.37x3.62	4	1045	10¼	85	Pro	N	2.62x2.00	7	3.25x1.75	3.25x3.00	abcdeg	18 mm	Op	1¾	....	21 1/16	43 3/16	50⅜	44
30	E	Al	HG	Al	4.62	89	1.37x4.00	4	1045	10¼	83	1045	N	2.75x1.75	7	3.00x1.87	3.00x3.00	abcde	⅞-18	Op	1¾	1185	26	35 7/16	46 9/16	45
(h)	E	Al	HG	CI	6.50	113	1.37x3.87	4	1045	10¼	85	Pro	N	2.62x2.00	7	3.25x1.75	3.25x3.00	abcdeg	18 mm	Op	1¾	1340	21 1/16	43 3/16	50⅜	46
30	E	Al	HG	Al	5.25	70	1.37x4.25	4	1045	10¼	83	1045	N	2.75x1.75	7	3.00x1.87	3.00x3.00	abcde	⅞-18	Op	1¾	1225	26	35 7/16	45 9/16	47
(h)	E	Al	HG	CI	7.25	....	1.62x4.37	4	1045	11¾	133	Pro	N	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdeg	18 mm	Op	1¾	1983	....	....	....	48
45	E	Al	HG	CI	6.43	190	1.87x4.25	4	1045	11¾	130	1045	N	3.00x2.00	7	3.62x2.62	3.62x3.50	abcdeg	18 mm	Op	1¾	2230	26 7/16	49 1/16	58 9/16	49
45	E	Al	HG	Al	6.00	89	1.37x4.60	4	1045	13¼	145	1045	N	2.75x2.50	7	3.50x2.50	3.50x3.50	abcde	⅞-18	Op	2	1575	26	41 15/16	54 7/16	50
(h)	E	Al	HG	CI	7.25	184	1.62x4.87	4	1045	11¾	133	Pro	N	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdeg	18 mm	Op	1¾	....	....	....	....	51
45	E	Al	HG	CI	6.43	196	1.87x4.75	4	1045	11¾	130	1045	N	3.00x2.00	7	3.62x2.62	3.62x3.50	abcdeg	18 mm	Op	1¾	2250	26 7/16	49 1/16	58 9/16	52
(h)	Bo	Al	HG	CI	8.37	262	1.87x5.00	4	1045	13¼	195	Pro	N	3.37x2.37	7	4.00x2.56	4.00x3.56	abcdeg	18 mm	Op	2½	3200	28	51½	65⅝	53
(h)	Bo	Al	HG	CI	8.37	294	1.87x5.50	4	1045	13¼	195	Pro	N	3.37x2.37	7	4.00x2.56	4.00x3.56	abcdeg	18 mm	Op	2½	3220	28	51½	65⅝	54
30	E	Al	HG	CI	9.18	294	2.00x5.50	4	1045	15⅜	314	1045	N	3.25x2.75	7	3.75x3.75	3.75x5.50	abcdeg	18 mm	Op	2	4950	32⅜	56¼	76⅝	55
30	E	Al	HG	CI	9.18	304	2.00x6.00	4	1045	15⅜	314	1045	N	3.25x2.75	7	3.75x3.75	3.75x5.50	abcdeg	18 mm	Op	2½	4975	32⅜	56¼	76⅝	56
30	E	Al	HG	CI	9.18	304	2.00x6.00	4	1045	15⅜	314	1045	N	3.25x2.75	7	3.75x3.75	3.75x5.50	abcdeg	18 mm	Op	2½	4975	32⅜	57 5/16	76⅝	57
30	E	Al	HG	CI	8.62	420	2.25x6.25	4	1045	18⅜	474	1045	N	4.00x3.75	7	4.25x4.81	4.25x5.50	abcde	⅞-18	Op	2½	7500	46½	59	92 7/16	58
30	E	Al	HG	CI	8.62	489	2.25x7.00	4	1045	18⅜	474	1045	N	4.00x3.75	7	4.25x4.81	4.25x5.50	abcde	⅞-18	Op	2½	7500	46½	59	92 7/16	59
30	E	Al	HG	CI	10.37	776	2.25x7.75	5	1045	18⅜	474	1045	N	4.00x3.75	7	4.25x4.81	4.25x5.50	abcdeg	⅞-18	Op(2)	2½	7800	46½	63¾	92 7/16	60
45	E	CNM	HG	Al	4.71	33	1.00x3.03	4	CS	9 15/32	38	CNS	Y	2.18x1.34	7	2.87x1.84	2.87x2.12	abcde	14 mm	Zen	1¼	850	27	36	45	61
45	E	CNM	HG	CI	4.71	48	1.12x3.03	4	CS	9 5/32	46	CNS	Y	2.18x1.34	7	2.87x1.84	2.87x2.12	abcde	14 mm	Zen	1⅜	852	29	35	43	62
45	N	.....	HG	Al	4.18	39	1.00x3.15	5	1035	8	38	1045	N	2.00x1.50	7	2.50x1.31	2.50x2.12	abe	14 mm	Zen	1¼	560	18	24	40½	63
45	E	CNM	HG	Al	4.40	37	1.00x3.46	4	CS	9 25/32	50	CNS	Y	2.18x1.34	7	2.87x1.84	2.87x2.12	abcde	14 mm	Str	1¼	850	29	35	43	64
45	E	CNM	HG	Al	4.40	36	1.00x3.46	5	CS	9 15/32	49	CNS	Y	2.18x1.34	7	3.00x1.84	3.00x1.93	abcde	14 mm	Str	1¼	850	29	35	43	65
45	E	CNM	Ch	Al	5.46	66	1.18x3.87	5	CS	10½	69	CNS	Y	2.37x1.75	7	2.75x2.50	2.75x2.87	abcdeg	18 mm	Zen	1¾	1279	34	42½	55½	66
45	E	CNM	Ch	Al	5.34	66	1.25x3.93	5	CS	10½	59	CNS	Y	2.37x1.75	7	2.75x2.56	2.75x2.93	abcdeg	18 mm	Zen	1¾	1291	34	42½	55½	67
(h)	E	CNM	HG	Al	4.40	44	1.18x3.62	5	CS	8 1/32	51	CS	Y	2.43x3.00	7	2.87x2.18	2.87x2.50	abcd	14 mm	Zen	1⅜	2200	38½	21¼	69¼	68
45	N	.....	Ch	Al	3.75	18	.812x2.78	3	1035	9 3/16	34	1040	Y	1.94x1.30	3	2.33x1.92	2.33x1.75	abce	14 mm	Car	1⅛	364	19	26⅜	23¼	69
45	E	Mo	HG	Al	2.50	6	.625x1.81	3	Al	6	6	1045	Y	1.00x1.00	2♦	....	....	....	18 mm	Str	⅝	68	17¼	16¾	14½	70
45	E	Mo	HG	Al	2.50	8	.625x2.06	3	Al	6	6	1045	Y	1.00x1.00	2♦	....	....	....	18 mm	Str	⅝	68	17¼	16¾	14½	71
45	Bo	Mo	HG	Al	2.75	12	.750x2.29	3	1035	8	20	1045	Y	1.12x1.25	2♦	....	....	....	18 mm	Str	¾	125	16¾	20 5/16	17½	72
45	E	Mo	HG	Al	2.96	10	.625x2.37	4	Al	6	6	1045	Y	1.00x1.00	2♦	....	....	....	18 mm	Str	⅝	70	17¾	16¾	15	73
45	Bo	Mo	HG	Al	2.82	14	.750x2.56	3	1035	8	20	1045	Y	1.12x1.25	2♦	....	....	....	18 mm	Str	¾	130	16¾	20 5/16	17½	74
45	Bo	Mo	HG	Al	3.75	24	.937x2.75	5	1035	9½	33	1045	Y	1.37x1.37	2♦	....	....	....	18 mm	Str	¾	....	18⅞	24⅜	19⅛	75
45	Bo	Mo	HG	Al	3.56	24	.937x2.75	3	1035	9½	33	1045	Y	1.37x1.37	2♦	....	....	....	18 mm	Str	¾	175	18⅞	24⅜	19⅛	76
45	Bo	Mo	HG	Al	3.68	26	.937x3.00	3	1035	9½	33	1045	Y	1.37x1.37	2♦	....	....	....	18 mm	Zen	1	180	18⅞	24⅜	19⅛	77
45	Bo	Mo	HG	Al	3.00	11	.875x2.17	4	1035	8⅜	21	1045	Y	1.75x1.12	2♦	....	....	g	18 mm	Str	¾	230	17	26¼	29	78
45	Bo	Mo	HG	Al	2.75	24	.937x2.75	5	1035	8⅜	29	1045	N	1.75x1.25	3	♦	♦	ag	18 mm	Str	1	340	20	29	36⅜	79
45	Bo	Mo	HG	Al	2.75	27	.937x2.75	4	1035	8⅜	29	1045	N	1.75x1.25	3	♦	♦	ag	18 mm	Str	1	345	20	29	36⅜	80
45	Bo	Mo	HG	CI	4.25	50	1.06x3.47	3	1035	10½	64	1045	N	2.00x2.00	3	1.93x2.50	2.06x3.00	abcdeg	⅞-18	Str	1¼	615	25¾	34¾	35¼	81
45	N	.....	HG	CI	4.75	118	1.18x3.93	5	CS	10½	119	CS	N	2.75x2.50	3	2.75x3.00	2.75x3.00	abcdeg	⅞-18	Str	1½	850	25¾	36⅜	47 1/16	82
45	N	.....	HG	CI	3.90	53	1.06x3.09	3	CS	10½	68	CS	N	2.50x1.75	4	2.50x2.50	2.50x3.00	abdeg	⅞-18	Str	1½	975	25¾	36¼	45 13/16	83
45	N	.....	HG	CI	4.87	66	1.25x3.14	3	CS	10½	75	CS	N	2.62x1.75	4	2.75x2.25	2.75x2.75	abdeg	⅞-18	Str	1½	1075	25¾	37 3/16	53⅝	84
45	N	.....	HG	CI	4.71	71	1.25x3.40	4	1035	10½	75	1045	N	2.62x1.75	4	2.75x2.25	2.75x2.75	abdeg	⅞-18	Str	1½	1095	25¾	37 5/16	53⅝	85
45	N	.....	HG	CI	4.62	81	1.25x3.40	4	1035	10½	75	1045	N	2.62x1.75	4	2.75x2.25	2.75x2.75	abdeg	⅞-18	Str	1½	1110	25¾	37 5/16	53⅝	86
45	N	.....	HG	CI	4.75	56	1.18x3.93	4	CS	10½	119	CS	N	2.75x2.50	4	2.75x3.00	2.75x3.00	abcdeg	⅞-18	Str	1¾	1260	25¾	37⅛	60 5/16	87
45	N	.....	HG	CI	4.68	82	1.18x3.93	4	1035	10½	87	1045	N	2.75x2.50	4	2.75x3.00	2.75x3.00	abcdeg	⅞-18	Str	1¾	1270	25¾	37⅛	60 5/16	88

DC—Durachrome Casting
DFS—Drop Forged Steel
Dia—Diachrome **Dur**—Duralumin
—Timing Gears or Chain
E—Used on Exhaust Valve seats
Ext—Extruded Steel **f**—Accessories Drive
F—In Head and Side ("F" Head)
FA—Fire Apparatus
g—Rocker Arms and Shafts
(h)—Intake 30°, Exhaust 45°
(H)—Horizontal Motor

HB—Horizontal in Block (Valves)
HC—Helical Gear and Chain
HG—Helical Gear **Hol**—Holley Carburetor
HS—High Speed Steel **I**—In Head (Valves)
In—Integral **Ind**—Industrial
JM—Jadson 1-S material
L—Valves at Side (L-Head)
M—Marine (Engine Type)
May—Mayer Carburetor
ML—McCord Lubricator System
Mo—Molybdenum **MS**—Manganese Steel

N—No or None **NCI**—Nickel Cast Iron
Nif—Niferrite **NS**—Nickel Steel
Op—Optional **Pro**—Proferal
PU—Power Units **r**—Reverse Gear
RC—Rail Cars **S**—Steel
SA—Special Alloy **SB**—Spiral Bevel Gear
SBG—Spur and Bevel Gear
SC-XB—Silicon Chromium
Sch—Schebler Carburetor **Se**—Separate
SG—Spur Gear **Sho**—Shore Carburetor
Sil—Silchrome Steel **Spec**—Special

SS—Semi-Steel **St**—Stellite Steel
SZ—Schebler and Zenith Carburetor
t—Tappets and Valve Mechanism
T—Valves Opposite (T-Head)
T—Trucks **TA**—Tungsten Alloy
Til—Tillotson Carburetor
To—Toledo TP-12 **Tr**—Tractors
Tun—Tungsten Steel **W**—Wet Liners
WA—Wausau Alloy **WR**—Wilcox-Rich-EA5
Y—Yes
Zen—Zenith Carburetor

American Aircraft Engines

Engine Make and Model	Civil Aeronautics License or A. T. C. No.	Cylinder Data: Arrangement	Cooling Medium	Number of Cylinders – Bore and Stroke (In.)	Total Piston Displacement (Cu. In.)	Compression Ratio	B.M.E.P. at Cruising Hp. (Lb. per Sq. In.)	Blower Ratio	Cylinder Material	No. of Valves per Cylinder: Intake	Exhaust	Valve Arrangement	Ratings: Maximum (Except Take-off): Horsepower	R. P. M.	At Sea Level or Altitude (Ft.)	Take-off: Horsepower	R. P. M.	Cruising: Horsepower	R. P. M.	Octane Rating of Fuel Required	Propeller Drive	Weight (Lb.): Engine—Dry Without Hub or Starter	Per Cruising Hp.	Carburetors: Number and Make Fitted	Ignition System: Make	Current Source	Number	Starting: Make	Method	Installation Dimensions (In.): Overall: Length	Height or O. D.	Width	Height Above Engine Bed (In.)	Diam. Mount., Ring or Distance Between Bearers
Akron (1)-Funk E	201	IV-L	W	4-3⅞x4¼	200.5	6.25	117‡	No	3	1	1	L	63	2125	SL					73	D	255	4.05‡	1-Zen	Bos	Mag	1		PS	35	25	16		
Allison C-15		V-60	Liq	12-5½x6	1710.0	6.65	146	8.77	8	2	2	OH	960	2600	12000	1090	3000	720	2230	100	G	1340	1.86	1-Str	Scin	Mag	1	Ecl	EM	98 17/32	41 3/16	29 9/32	23 5/16	18⅜
Continental Series 7, 8, 9-A-50	190	Hor	Air	4-3⅞x3⅝	171.0	5.40	122‡	No	5	1	1	I	50	1900	SL	50	1900			65	D	160	3.20‡	1-Str	Scin	Mag	1	Ecl*	EM	30 13/32	23	31 11/16		
Continental Series 7, 8, 9-A-65	205	Hor	Air	4-3⅞x3⅝	171.0	6.30	131‡	No	5	1	1	I	65	2300	SL	65	2300			73	D	160	2.46‡	1-Str	Scin	Mag	1	Ecl*	EM	30 13/32	23	31 11/16		
Continental Series 8, 9-A-75	213	Hor	Air	4-3⅞x3⅝	171.0	6.30	134‡	No	5	1	1	I	75	2600	SL	75	2600			73	D	170	2.27‡	1-Str	Scin	Mag	2	Ecl*	EM	30 13/32	23	31 11/16		
Continental Series 8, 9-A-80	217	Hor	Air	4-3⅞x3⅝	171.0	7.50	137‡	No	5	1	1	I	80	2700	SL	80	2700			80	D	173	2.16‡	1-Str	Scin	Mag	2	Ecl*	EM	30 13/32	23	31 11/16		
Continental W670-M1	168	Rad	Air	7-5⅛x4⅝	668.0	6.10	135‡	No	5	1	1	I	250	2200	SL	250	2200			80	D	460	1.84‡	1-Mar	Scin	M-B	2	Ecl*	EM	34 3/16	42½			20
Continental W670-K	162	Rad	Air	7-5⅛x4⅝	668.0	5.40	123‡	No	5	1	1	I	225	2175	SL	225	2175			65	D	460	2.04‡	1-Str	Scin	M-B	2	Ecl*	EM	34 3/16	42½			20
Continental A-40-4	72	Hor	Air	4-3⅛x3¾	115.0	5.14	90	No	4	1	1	L	42	2700	SL	40	2575	30	2300	65	D	145	4.83	1-	Scin	Mag	1			14¼	21 5/16	25½		8¼
Franklin (6) 4AC150	194	Hor	Air	4-3⅝x3⅝	150.0	6.60	94	No	6	1	1	I	50	2300	SL			37½	2100	70	D	161	4.30	1-MS	SE	Mag	1		PS	27 31/32	18⅜	34⅜	11 3/16	10
Franklin 4AC150	194	Hor	Air	4-3⅝x3⅝	150.0	5.50	94	No	6	1	1	I	50	2300	SL			37½	2100	70	D	172	4.60	1-MS	SE	Mag	2		PS	28	18⅜	34⅜	11 3/16	10
Franklin 4AC171	206	Hor	Air	4-3⅞x3⅝	171.0	6.25	97	No	6	1	1	I	60	2350	SL			45	2150	70	D	161	3.58	1-MS	SE	Mag	1		PS	27 31/32	18⅜	34⅜	11 3/16	10
Franklin 4AC171	206	Hor	Air	4-3⅞x3⅝	171.0	6.25	97	No	6	1	1	I	60	2350	SL			45	2150	70	D	172	3.82	1-MS	SE	Mag	2		PS	28	18⅜	34⅜	11 3/16	10
Franklin 4AC171	206	Hor	Air	4-3⅞x3⅝	171.0	6.25	97	No	6	1	1	I	60	2350	SL			45	2150	70	D	204	4.55	1-MS	AE	BM	2	Au	EM	28 9/16	22 3/16	34⅜	14 11/16	10
Jacobs L-5	156	Rad	Air	7-5½x5	831.0	6.00	105	No	5	1	1	I	285	2000	SL	300	2125	210	1900	73	D	510	2.43	1-Str	Scin	Bat	2	Ecl	EM	19	43½			16½
Jacobs L-5M	156	Rad	Air	7-5½x5	831.0	6.00	105	No	5	1	1	I	285	2000	SL	300	2125	210	1900	73	D	504	2.40	1-Str	Scin	Mag	2	Ecl	EM	19	43½			16½
Jacobs L-5MB	156	Rad	Air	7-5½x5	831.0	6.00	105	No	5	1	1	I	285	2000	SL	300	2125	210	1900	73	D	525	2.50	1-Str	Scin	(e)	(e)	Ecl	EM	19	43½			16½
Jacobs L-5MA7	156	Rad	Air	7-5½x5	831.0	6.00	105	No	5	1	1	I	285	2000	SL	300	2125	210	1900	73	D	510	2.43	1-Str	Scin	Mag	2	Ecl	EM	19	43½			16½
Jacobs L-6	195	Rad	Air	7-5½x5½	914.0	6.00	100	No	5	1	1	I	300	2100	3700	330	2200	220	1900	80	D	535	2.43	1-Str	Scin	Bat	2	Ecl	EM	19⅞	45⅜			16½
Jacobs L-6M	195	Rad	Air	7-5½x5½	914.0	6.00	96	No	5	1	1	I	300	2100	3700	330	2200	210	1900	80	D	550	2.62	1-Str	Scin	Mag	2	Ecl	EM	19⅞	45⅜			16½
Jacobs L-6MB	195	Rad	Air	7-5½x5½	914.0	6.00	96	No	5	1	1	I	300	2100	3700	330	2200	210	1900	80	D	550	2.62	1-Str	Scin	(e)	(e)	Ecl	EM	19⅞	45⅜			16½
Jacobs L-6MA	195	Rad	Air	7-5½x5½	914.0	6.00	96	No	5	1	1	I	300	2100	3700	330	2200	210	1900	80	D	550	2.62	1-Str	Scin	Mag	2	Ecl	EM	19⅞	45⅜			16½
Jacobs L-4	121	Rad	Air	7-5¼x5	757.0	5.38	97	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	480	2.74	1-Str	Scin	Bat	2	Ecl	EM	19	43½			16½
Jacobs L-4M	121	Rad	Air	7-5¼x5	757.0	5.38	97	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	473	2.70	1-Str	Scin	Mag	2	Ecl	EM	19	43½			16½
Jacobs L-4MB	121	Rad	Air	7-5¼x5	757.0	5.38	97	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	494	2.82	1-Str	Scin	(e)	(e)	Ecl	EM	19	43½			16½
Jacobs L-4MA7	121	Rad	Air	7-5¼x5	757.0	5.38	97	No	5	1	1	I	225	2000	SL	245	2200	175	1900	73	D	476	2.72	1-Str	Scin	Mag	2			19	43½			16½
Kinner K-5	3	Rad	Air	5-4¼x5¼	372.0	5.00	90	No	5	1	1	I	100	1810	SL			70	1650	73	D	275	3.93	1-Str	BS	Mag	2	Ecl	Air	32 5/16	45¾			
Kinner B-5	51	Rad	Air	5-4⅝x5¼	441.0	5.25	93	No	5	1	1	I	125	1925	SL			89	1725	73	D	295	3.31	1-Str	Scin	Mag	2	Ecl	A-DE	32 5/16	45⅜			
Kinner R-5	153	Rad	Air	5-5x5½	540.0	5.50	92	No	5	1	1	I	160	1850	SL			113	1800	73	D	330	2.92	1-Str	Scin	Mag	2	Ecl	A-DE	32 5/16	45 11/16			
Kinner C-5	62	Rad	Air	5-5⅝x5¾	715.0	5.20	98	No	5	1	1	I	210	1900	SL			150	1700	73	D	420	2.80	1-Str	Scin	Mag	2	Ecl	EI	34 13/16	50			
Kinner C-7	122	Rad	Air	7-5⅝x6	1044	5.25	98	No	5	1	1	I	300	1800	SL			215	1650	73	D	600	2.79	1-Str	Scin	Mag	2	Ecl	DE	44⅛	51 5/16			
Kinner SC-7	175	Rad	Air	7-5⅝x6	1044	5.50	111	9.70	5	1	1	I	350	1900	5000	350	1900	250	1700	73	D	650	2.60	1-Str	Scin	Mag	2	Ecl	DE	45 13/32	47¾			
Lambert (2) R-266	38	Rad	Air	5-4¼x3¾	265.9	5.55	113‡	No	8	1	1	I	90	2375	900	72		63		73	D	224	3.56	1-Str	Ben	Mag	2		PE	30⅜	34¼		11	13¾
Lenape-Papoose (3) LM-3	203	Rad	Air	3-4⅛x4	160.4	4.90	111‡	No	5	1	1	I	52	2325	SL					73	D	138	2.65‡	1-Str	ES	Mag	2	Ecl	EM	24		36		12½
Lenape-Papoose LM-365	203	Rad	Air	3-4⅛x4	160.4	5.80	137‡	No	5	1	1	I	65	2350	SL					73	D	140	2.15‡	1-Str	ES	Mag	2	Ecl	EM	24		36		12½
Lenape-Papoose LM-375	215	Rad	Air	3-4⅛x4	160.4	5.80	151‡	No	5	1	1	I	75	2450	SL					73	D	142	1.89‡	1-Str	ES	Mag	2	Ecl	EM	24		36		12½
Lenape-Brave LM-5	212	Rad	Air	5-4⅛x4	267.0	5.00	128‡	No	5	1	1	I	95	2200	SL					73	D	192	2.02‡	1-Str	ES	Mag	2	Ecl	EM	24		36		12½
Lycoming (4) O-145-A1	199	Hor	Air	4-3⅝x3½	144.5	5.65	99	No	7	1	1	I	50	2300	SL	50	2300	38	2100	73	D	152	4.00	1-Str	Scin	Mag	1			23¾	19 5/16	29 9/16	9 15/32	10¼
Lycoming O-145-A2	199	Hor	Air	4-3⅝x3½	144.5	5.65	110	No	7	1	1	I	55	2300	SL	55	2300	42	2100	73	D	162	3.86	1-Str	Scin	Mag	2			24⅝	19 5/16	29 9/16	9 15/32	10¼
Lycoming O-145-A3	199	Hor	Air	4-3⅝x3½	144.5	5.65	110	No	7	1	1	I	55	2300	SL	55	2300	42	2100	73	D	164	3.91	1-Str	Scin	Mag	2	Ecl	EM	24⅝	22⅛	29 9/16	9 15/32	10¼
Lycoming O-145-B1	210	Hor	Air	4-3⅝x3½	144.5	6.50	112	No	7	1	1	I	65	2550	SL	65	2550	47	2300	73	D	155	3.30	1-Str	Scin	Mag	1			23¾	20⅛	29 9/16	9 15/32	10¼
Lycoming O-145-B2	210	Hor	Air	4-3⅝x3½	144.5	6.50	112	No	7	1	1	I	65	2550	SL	65	2550	47	2300	73	D	165	3.51	1-Str	Scin	Mag	2			24⅝	20⅛	29 9/16	9 15/32	10¼
Lycoming O-145-B3	210	Hor	Air	4-3⅝x3½	144.5	6.50	112	No	7	1	1	I	65	2550	SL	65	2550	47	2300	73	D	167	3.55	1-Str	Scin	Mag	2	Ecl	EM	24⅝	22⅛	29 9/16	9 15/32	10¼
Lycoming O-145-C1	210	Hor	Air	4-3⅝x3½	144.5	6.50	108	No	7	1	1	I	75	3100	SL	75	3100	55	2800	73	D	155	2.82	1-Str	Scin	Mag	1			23¾	20⅛	29 9/16	9 15/32	10¼
Lycoming O-145-C2	210	Hor	Air	4-3⅝x3½	144.5	6.50	108	No	7	1	1	I	75	3100	SL	75	3100	55	2800	73	D	165	3.00	1-Str	Scin	Mag	2			24⅝	22⅛	29 9/16	9 15/32	10¼
Lycoming O-145-C3	210	Hor	Air	4-3⅝x3½	144.5	6.50	108	No	7	1	1	I	75	3100	SL	75	3100	55	2800	73	D	167	3.04	1-Str	Scin	Mag	2	Ecl	EM	24⅝	22⅛	29 9/16	9 15/32	10¼
Lycoming GO-145-C1	210	Hor	Air	4-3⅝x3½	144.5	6.50	106	No	7	1	1	I	75	3200	SL	75	3200	56	2900	73	G	181	3.24	1-Str	Scin	Mag	1			28 5/16	20⅛	29 9/16	9 35/64	10¼
Lycoming GO-145-C2	210	Hor	Air	4-3⅝x3½	144.5	6.50	106	No	7	1	1	I	75	3200	SL	75	3200	56	2900	73	G	191	3.41	1-Str	Scin	Mag	2			29 3/16	20⅛	29 9/16	9 35/64	10¼
Lycoming GO-145-C3	210	Hor	Air	4-3⅝x3½	144.5	6.50	106	No	7	1	1	I	75	3200	SL	75	3200	56	2900	73	G	193	3.45	1-Str	Scin	Mag	2	Ecl	EM	29 3/16	22⅛	29 9/16	9 35/64	10¼
Lycoming R-530-D1	182	Rad	Air	7-4⅝x4½	529.2	6.50	124	1.00	5	1	1	I	210	2200	SL	220	2300	165(a)	2000	80	D	430	2.61	1-Str	Scin(b)	Mag	1	Ecl	EM	34 17/64		43½		19¼
Lycoming R-530-D2	183	Rad	Air	7-4⅝x4½	529.2	5.50	116	1.00	5	1	1	I	200	2200	SL	210	2300	155(a)	2000	73	D	430	2.77	1-Str	Scin(b)	Mag	1	Ecl	EM	34 17/64		43½		19¼
Lycoming R-680-B4C	108	Rad	Air	9-4⅝x4½	680.4	5.50	101	1.00	5	1	1	I	225	2100	SL	225	2100	165	1900	73	D	492	2.98	1-Str	Scin(b)	Mag	1	Ecl	EM	37 51/64		43½		19¼
Lycoming R-680-D5	172	Rad	Air	9-4⅝x4½	680.4	6.50	122	1.00	5	1	1	I	245	2100	SL	260	2300	210(a)	2000	80	D	505	2.40	1-Str	Scin(b)	Mag	1	Ecl	EM	37 51/64		43½		19¼
Lycoming R-680-D6	173	Rad	Air	9-4⅝x4½	680.4	5.50	113	1.00	5	1	1	I	225	2100	SL	245	2300	195(a)	2000	73	D	505	2.59	1-Str	Scin(b)	Mag	1	Ecl	EM	37 51/64		43½		19¼
Lycoming R-680-E1	202	Rad	Air	9-4⅝x4½	680.4	6.20	122	1.00	5	1	1	I	275	2200	SL	290	2300	210(a)	2000	80	D	514	2.45	1-Str	Scin(b)	Mag	1	Ecl	EM	37 51/64		43½		19¼
Lycoming R-680-E2	202	Rad	Air	9-4⅝x4½	680.4	5.50	116	1.00	5	1	1	I	235	2200	SL	280	2300	200(a)	2000	73	D	514	2.57	1-Str	Scin(b)	Mag	1	Ecl	EM	37 51/64		43½		19¼
Lycoming R-680-E3	202	Rad	Air	9-4⅝x4½	680.4	7.00	129	1.00	5	1	1	I	235	2200	SL	300	2300	222(a)	2000	87	D	514	2.31	1-Str	Scin(b)	Mag	1	Ecl	EM	37 51/64		43½		19¼
Menasco-Pirate C4	67	IV-L	Air	4-4¾x5⅛	363.0	5.50	105	No	5	1	1	I	125	2175	SL	125	2175	95	1975	73	D	284	2.99	1-Str	Ben	Mag	2	Ecl	HC	47 11/32	28 3/16	17 1/32		16⅝
Menasco-Pirate C4S	134	IV-L	Air	4-4¾x5⅛	363.0	5.50	121	9.60	5	1	1	I	150	2260	3000	158	2260	112	2125	73	D	299	2.67	1-Str	Ben	Mag	2	Ecl	HC	47 11/32	28 3/16	14½		16⅝
Menasco-Buccaneer B6	68	IV-L	Air	6-4½x5⅛	489.0	5.50	108	No	5	1	1	I	160	1975	SL	160	1975	120	1800	73	D	398	3.32	1-Str	Bos	Mag	2		PS	59 1/16	28 1/16	11⅞		11⅞

Menasco-Buccaneer	B6S	139	IV-L	Air	6-4½x5⅛	489.0	5.50	121	8.75	5	1	1	I	200	2250	4500	212	2250	150	2025	73	D	423	2.82	1-Str	Bos	Mag	2		PS	60⅛	28 5/16	14 29/32		11⅞
Menasco-Super Buccaneer	C6S-4	197	IV-L	Air	6-4¾x5⅛	544.0	5.50	132	10.90	5	1	1	I	260	2300	7500	290	2400	195	2150	87	D	550	2.82	1-Str	Scin	Mag	2	Ecl	EM	67 15/32	30 19/32	16 9/16		13½
Menasco-Unitwin	2-544	Pend.	IV-L†	Air	12-4¾x5⅛	1088.0	5.50	147	10.90	5	1	1	I	600	2400	5400	660	2480	450	2230	87	G	1350	3.00	2-Str	Scin	Mag	4	Ecl	EM	87⅛	31½	34⅝		30
Pratt & Whitney-Wasp Jr.	SB2		Rad	Air	9-5 3/16x5 3/16	985.0	6.00	121	10.00	5	1	1	I	400	2000	5000	450	2300	300	2000	80**	D	690	2.30	1-Str	Scin	Mag	2	Opt	Opt	41 19/32	45¾			23⅜
Pratt & Whitney-Wasp Jr.	TB2		Rad	Air	9-5 3/16x5 3/16	985.0	6.00	121	8.00	5	1	1	I	420	2200	SL	440	2300	300	2000	80	D	690	2.30	1-Str	Scin	Mag	2	Opt	Opt	41 19/32	45¾			23⅜
Pratt & Whitney-Wasp	S1H1	129	Rad	Air	9-5¾x5¾	1344.0	6.00	118	12.00	5	1	1	I	550	2200	8000	600	2250	400	2000	87	D	864	2.16	1-Str	Scin	Mag	2	Opt	Opt	42 15/16	51 7/16			23⅜
Pratt & Whitney-Wasp	S2H1	163	Rad	Air	9-5¾x5¾	1344.0	6.00	111	12.00	5	1	1	I	500	2200	10500	600	2250	375	2000	80**	D	864	2.30	1-Str	Scin	Mag	2	Opt	Opt	42 15/16	51 7/16			23⅜
Pratt & Whitney-Wasp	S3H1	143	Red	Air	9-5¾c5¾	1344.0	6.00	118	10.00	5	1	1	I	550	2200	5000	600	2250	400	2000	80**	D	864	2.16	1-Str	Scin	Mag	2	Opt	Opt	42 15/16	51 7/16			23⅜
Pratt & Whitney-Wasp	S1H1-G	129	Rad	Air	9-5¾x5¾	1344.0	6.00	118	12.00	5	1	1	I	550	2200	8000	600	2250	400	2000	87	G	930	2.33	1-Str	Scin	Mag	2	Opt	Opt	47 47/64	51 7/16			23⅜
Pratt & Whitney-Wasp	S2H1-G	141	Rad	Air	9-5¾x5¾	1344.0	6.00	111	12.00	5	1	1	I	500	2200	10500	600	2250	375	2000	80**	G	930	2.48	1-Str	Scin	Mag	2	Opt	Opt	47 47/64	51 7/16			23⅜
Pratt & Whitney-Wasp	S3H1-G	142	Rad	Air	9-5¾x5¾	1344.0	6.00	118	10.00	5	1	1	I	550	2200	5000	600	2250	400	2000	80**	G	930	2.33	1-Str	Scin	Mag	2	Opt	Opt	47 47/64	51 7/16			23⅜
Pratt & Whitney-Hornet	S1E	Mil	Rad	Air	9-6⅛x6⅜	1690.0	6.50	123	12.00	5	1	1	I	750	2250	7000	875	2300	525	2000	87	D	975	1.86	1-Str	Scin	Mag	2	Opt	Opt	44 15/64	54 7/16			23⅜
Pratt & Whitney-Hornet	S5E	164	Rad	Air	9-6⅛x6⅜	1690.0	6.50	123	12.00	5	1	1	I	700	2050	6000	700	2050	500	1900	87	D	975	1.95	1-Str	Scin	Mag	2	Opt	Opt	44 15/64	54 7/16			23⅜
Pratt & Whitney-Hornet	T2E	99	Rad	Air	9-6⅛x6⅜	1690.0	6.00	117	10.00	5	1	1	I	650	2000	SL	650	2000	450	1800	80	D	975	2.16	1-Str	Scin	Mag	2	Opt	Opt	44 15/64	54 7/16			23⅜
Pratt & Whitney-Hornet	S1E3-G	193	Rad	Air	9-6⅛x6⅜	1690.0	6.50	123	10.00	5	1	1	I	750	2250	7000	875	2300	525	2000	87	G	1087	2.07	1-Str	Scin	Mag	2	Opt	Opt	50 33/64	54 7/16			23⅜
Pratt & Whitney-Twin Wasp Jr.	SB4-G	179	Rad	Air	14-5 3/16x5 3/16	1535.0	6.75	120	11.00	5	1	1	I	750	2550	9500	825	2625	525	2250	87	G	1133	2.16	1-Str	Scin	Mag	2	Opt	Opt	53 17/64	44⅛			23⅜
Pratt & Whitney-Twin Wasp	SC3-G	186	Rad	Air	14-5½x5½	1830.0	6.70	125	7.15	5	1	1	I	900	2550	12000	1050	2700	650	2250	87	G	1450▼	2.23	1-Str	Scin	Mag	2	Opt	Opt	60 5/16▼	48			27
Pratt & Whitney-Twin Wasp	S1C3-G	186	Rad	Air	14-5½x5½	1830.0	6.70	130	7.15	5	1	1	I	1050	2550	7500	1200	2700	700	2325	90	G	1450▼	2.07	1-Str	Scin	Mag	2	Opt	Opt	60 5/16▼	48			27
Pratt & Whitney-Twin Wasp	S3C3-G	Mil	Rad	Air	14-5½x5½	1830.0	6.70	137	8.00	5	1	1	I	950	2700	14300	1100	2700	700	2200	100	G	1465▼	2.09	1-Str	Scin	Mag	2	Opt	Opt	61½▼	48			27
Pratt & Whitney-Twin Wasp	S3C4-G	Mil	Rad	Air	14-5½x5½	1830.0	6.70	139	7.15	5	1	1	I	1100	2550	6200	1200	2700	700	2175	100	G	1490▼	2.13	1-Str	Scin	Mag	2	Opt	Opt	63 5/16▼	48			27
		(2-Speed Supercharger Engine)						139	8.47					1000	2700	14500			700	2175															
Pratt & Whitney-Twin Wasp	S4C4-G	Mil	Rad	Air	14-5½x5½	1830.0	6.70	139	7.15	5	1	1	I	1050	2550	7500	1200	2700	700	2175	90	G	1490▼	2.13	1-Str	Scin	Mag	2	Opt	Opt	63 5/16▼	48			27
		(2 Speed Supercharger Engine)						125	8.47					900	2550	15400			650	2250				2.29											
Ranger	6-440C-2	216	IV-L	Air	6-4⅛x5½	441.0	6.00	102	No	5	1	1	OH	175	2450	SL			130	2300	65	D	355	2.73	1-Str	Scin	Mag	2	Ecl	EM	51 1/16	31¾	20¼	12⅛	11⅞
Ranger	6-410B-3	187	IV-L	Air	6-4⅛x5⅛	411.0	6.50	107	No	5	1	1	OH	165	2450	SL			125	2250	80	D	345	2.76	1-Str	Scin	Mag	2	Ecl	EM	50 3/32	31 9/16	20 13/32	12¼	11⅞
Ranger	V-770B-4	184	IV-V	Air	12-4x5⅛	773.0	6.50	110	No	5	1	1	OH	305	2300	SL	315	2400	230	2150	80	D	565	2.46	2-Str	Scin (b)	Mag	1	Ecl	EM	61	27 3/16	28	10½	13¼
Ranger	V-820C-1		IV-V	Air	12-4⅛x5⅛	822.0	7.50	116	No	5	1	1	OH	375	2400	SL			260	2150	87	D	565	2.17	2-Str	Scin (b)	Mag	1	Ecl	EM	61	27 3/16	28	10½	13¼
Ranger	SGV-770B-3	84	IV-V	Air	12-4x5⅛	773.0	6.00	123	7.71	5	1	1	OH	420	2800	SL			300	2500	87	G	640	2.13	1-Str	Scin (b)	Mag	1	Ecl	EM	61 5/16	32¼	28	12½	13¼
Ranger	SGV-770B-6	207	IV-V	Air	12-4x5⅛	773.0	6.00	123	8.84	5	1	1	OH	420	2850	5700	500	2950	300	2500	87	G	640	2.13	1-Str	Scin (b)	Mag	1	Ecl	EM	61 5/16	32¼	28	12½	13¼
Ranger	SGV-770B-5	185	IV-V	Air	12-4x5⅛	773.0	6.00	123	8.84	5	1	1	OH	420	2800	3000	450	2900	300	2500	87	G	640	2.13	1-Str	Scin (b)	Mag	1	Ecl	EM	61 5/16	32¼	28	12½	13¼
Rover	L-267	37	IV-L	Air	4-4⅛x5	267.2	5.10	113‡	No	3	1	1	I	75	1975	SL					78	D	225	3.00‡	1-Str	Scin	Mag	2			42¼	31⅞	16½	4 13/32	14
Sky (5)	70	200	IV-L	Air	4-3⅞x4¼	200.0	6.25	94	No	1	1	1	OH	60	2050	SL			45	1900	73	D	178	3.96	1-Link	ES	Mag	2		PS	40	27	19	5	13½
Warner-Super Scarab	50	104	Rad	Air	7-4⅝x4¼	499.0	5.55	112‡	No	5	1	1	I	145	2050	SL	145	2050	(f)		73	D	305	2.10‡	1-Str	BS	M-B	2	Ecl	EM	14	36 9/16			17
Warner-Scarab	50	2	Rad	Air	7-4¼x4¼	422.0	5.20	115‡	No	5	1	1	I	125	2050	SL	125	2050	(f)		73	D	285	2.28‡	1-Str	BS	M-B	2	Ecl	EM	14	36 9/16			17
Warner-Scarab Jr.	50	54	Rad	Air	5-4⅝x4¼	301.0	5.20	117‡	No	5	1	1	I	90	2025	SL	90	2025	(f)		73	D	230	2.56‡	1-Hol	Scin	Mag	1	Ecl	EM	14	36 9/16			17
Warner-Super Scarab	165	214	Rad	Air	7-4⅝x4¼	500.0	6.40	123‡	No	5	1	1	I	165	2100	SL	175	2250	(f)		73	D	332	2.01‡	1-Str	Scin	Mag	2	Ecl	EM	30 25/64	37¼			17½
Wright	Cyclone GR-2600-A2B	176	Rad	Air	14-6⅛x6 5/16	2603.0	6.30	144	7.00	5	1	1	I	1350	2300	5800	1600	2400	900	1900	90 (d)	G	1935	2.15	1-SC	Scin	Mag	2	Opt	Opt	62 1/16	55			25
Wright	Cyclone GR-2600-A5B	Pend	Rad	Air	14-6⅛x6 5/16	2603.0	6.30	144	7.14	5	1	1	I	1350	2300	5000	1600	2400	900	1900	90 (d)	G	1950	2.17	1-SC	Scin	Mag	2	Opt	Opt	62 1/16	55			25
		(2-Speed Supercharger Engine)							10.00					1275	2300	11500																			
Wright	Cyclone GR-1820-G202A	Pend	Rad	Air	9-6⅛x6⅞	1823.0	6.70	141	7.00	5	1	1	I	1000	2300	4500	1200	2500	650	2000	90 (c)	G	1290	1.98	1-SC	Scin	Mag	2	Opt	Opt	50 3/64	55 7/64			23⅜
Wright	Cyclone GR-1820-G203A	Pend	Rad	Air	9-6⅛x6⅞	1823.0	6.70	141	8.30	5	1	1	I	950	2300	9100	1100	2500	650	2000	90 (c)	G	1305	2.01	1-SC	Scin	Mag	2	Opt	Opt	50 3/64	55 7/64			23⅜
Wright	Cyclone GR-1820-G205A	Pend	Rad	Air	9-6⅛x6⅞	1823.0	6.70	141	7.14	5	1	1	I	1000	2300	4500	1200	2500	650	2000	90 (c)	G	1302	2.00	1-SC	Scin	Mag	2	Opt	Opt	50 3/64	55 7/64			23⅜
		(2-Speed Supercharger Engine)							10.00					900	2300	14000																			
Wright	Cyclone GR-1820-G102A	169	Rad	Air	9-6⅛x6⅞	1823.0	6.30	143	7.00	5	1	1	I	900	2300	6700	1100	2350	625	1900	90 (c)	G	1260	2.02	1-SC	Scin	Mag	2	Opt	Opt	48⅛	55 7/64			23⅜
Wright	Cyclone GR-1820-G103A	180	Rad	Air	9-6⅛x6⅞	1823.0	6.30	143	8.31	5	1	1	I	860	2300	11100	1000	2350	625	1900	90 (c)	G	1260	2.02	1-SC	Scin	Mag	2	Opt	Opt	48⅛	55 7/64			23⅜
Wright	Cyclone GR-1820-G105A	192	Rad	Air	9-6⅛x6⅞	1823.0	6.30	143	7.14	5	1	1	I	900	2300	6700	1100	2350	625	1900	90 (c)	G	1272	2.04	1-SC	Scin	Mag	2	Opt	Opt	48⅛	55 7/64			23⅜
		(2-Speed Supercharger Engine)							10.00					775	2300	17300																			
Wright	■Cyclone R-1820-G2	157	Rad	Air	9-6⅛x6⅞	1823.0	6.45	137	7.00	5	1	1	I	850	2100	5800	1000	2200	600	1900	87	D	1103	1.84	1-SC	Scin	Mag	2	Opt	Opt	43¼	54¼			23⅜
Wright	■Cyclone R-1820-G3	171	Rad	Air	9-6⅛x6⅞	1823.0	6.45	137	8.31	5	1	1	I	840	2100	8700	875	2200	600	1900	87	D	1103	1.84	1-SC	Scin	Mag	2	Opt	Opt	43¼	54¼			23⅜
Wright	■Cyclone R-1820-G3B	171	Rad	Air	9-6⅛x6⅞	1823.0	6.20	137	8.31	5	1	1	I	820	2100	8800	900	2350	600	1900	87	D	1103	1.84	1-SC	Scin	Mag	2	Opt	Opt	43¼	54¼			23⅜
Wright	■Cyclone R-1820-G5	154	Rad	Air	9-6⅛x6⅞	1823.0	6.45	137	7.14	5	1	1	I	800	2100	6000	1000	2200	600	1900	87	D	1115	1.86	1-SC	Scin	Mag	2	Opt	Opt	43¼	54¼			23⅜
		(2-Speed Supercharger Engine)							10.00					750	2100	15200																			
Wright	♦■Cyclone R-1820-F52	148	Rad	Air	9-6⅛x6⅞	1823.0	6.40	126	7.00	5	1	1	I	775	2100	5800	890	2200	550	1900	87	D	1000	1.82	1-SC	Scin	Mag	2	Opt	Opt	43⅝	54 3/32			23⅜
Wright	■Cyclone R-1820-F53	149	Rad	Air	9-6⅛x6⅞	1823.0	6.40	126	8.31	5	1	1	I	745	2100	9600	785	2200	550	1900	87	D	1000	1.82	1-SC	Scin	Mag	2	Opt	Opt	43⅝	54 3/32			23⅜
Wright	■Cyclone R-1820-F55	198	Rad	Air	9-6⅛x6⅞	1823.0	6.40	126	(g)	5	1	1	I	760	2100	5800	875	2200	550	1900	87	D	1012	1.84	1-SC	Scin	Mag	2	Opt	Opt	43⅝	54 3/32			23⅜
Wright	■Cyclone R-1820-F56	159	Rad	Air	9-6⅛x6⅞	1823.0	6.40	126	8.83	5	1	1	I	755	2100	11300	785	2200	550	1900	87	D	1000	1.82	1-SC	Scin	Mag	2	Opt	Opt	43⅝	54 3/32			23⅜
Wright	♦■Cyclone R-1820-F62	148	Rad	Air	9-6⅛x6⅞	1823.0	6.40	126	7.00	5	1	1	I	760	2100	5800	900	2350	550	1900	87	D	1000	1.82	1-SC	Scin	Mag	2	Opt	Opt	43⅝	54 3/32			23⅜
Wright	Whirlwind R-975-E1	87	Rad	Air	9-5x5½	973.0	6.00	121	7.81	5	1	1	I	365	2100	SL	365	2100	290	1950	73	D	660	2.28	1-Str	Scin	Mag	2	Opt	Opt	41 13/32	45			23⅜
Wright	Whirlwind R-975-E3	125	Rad	Air	9-5x5½	973.0	6.30	132	10.15	5	1	1	I	420	2200	1400	450	2250	325	2000	80	D	675	2.08	1-Str	Scin	Mag	2	Opt	Opt	41 13/32	45			23⅜
Wright	Whirlwind R-760-ET	126	Rad	Air	7-5x5½	756.0	6.10	110	No	5	1	1	I	235	2000	SL	235	2000	195	1850	73	D	540	2.77	1-Str	Scin	Mag	2	Opt	Opt	42 1/16	45			19¼
Wright	Whirlwind R-760-E1	94	Rad	Air	7-5x5½	756.0	6.10	118	7.05	5	1	1	I	285	2100	SL	300	2250	225	2000	73	D	570	2.53	1-Str	Scin	Mag	2	Opt	Opt	42 1/16	45			19¼
Wright	Whirlwind R-760-E2	155	Rad	Air	7-5x5½	756.0	6.30	118	9.17	5	1	1	I	320	2200	SL	300	2400	225	2000	80	D	570	2.53	1-Str	Scin	Mag	2	Opt	Opt	42 1/16	45			19¼

ABBREVIATIONS

General

‡—Based on Maximum Horsepower
*—Optional
**—87 Octane rating for take off
▼—Applies to motor with .5625 propeller gear ratio
■—Gear drive engines also available at same ratings
♦—May be equipped with two speed supercharger
†—Unit consists of 2 six-cylinder motors placed side by side at 8° angle
(a)—Rate with controllable propeller at 2000 feet
(b)—Dual type
(c)—May also be obtained for use with 87 Octane fuel with slightly lower ratings
(d)—May also be obtained for use with 95 Octane fuel with same ratings
(e)—One Magneto, one battery
(f)—75% Power allowable
(g)—7.14 and 10.00:1 Blower ratios
Liq—Liquid
Mil—Military
Pend—A. T. C. pending
W—Water

Cylinder Arrangement

Hor—Horizontal opposed
IV-L—Inverted-In-Line
IV-V—Inverted-V type
Rad—Radial

Cylinder Material

(1)—Aluminum with Cast Iron Liner
(2)—Aluminum with Steel Liner
(3)—Cast Iron
(4)—Cast Iron with Aluminum Head
(5)—Steel with Aluminum Head
(6)—Aluminum with Nickel Iron Liner
(7)—Cast Semi-Steel with Aluminum Head
(8)—Nickel Iron with Aluminum Head

Valve Location

I—In Head with push rods and rocker arms
L—Valves at side
OH—Overhead Camshaft

Rating

SL—Sea Level

Propeller Drive

D—Direct G—Geared

Carburetor Make

Hol—Holley
Lin—Linkert
MS—Marvel or Stromberg
Mar—Marvel
SC—Stromberg or Chandler-Evans
Str—Stromberg
Zen—Zenith

Ignition System Make

Ben—Bendix
Bos—Bosch
BS—Bosch or Scintilla
ES—Edison-Splitdorf
Scin—Scintilla
SE—Scintilla or Eisemann

Current Sources

B.M.—Battery and Magneto
Bat—Battery
Mag—Magneto
M-B—Magneto, Battery optional

Starter Make

Au—Auto-Lite
Ecl—Eclipse
Opt—Optional

Method of Starting

A-DE—Air or Direct Cranking Electric
DE—Direct Cranking Electric
EI—Electric Inertia
EM—Electric Motor
HC—Hand Crank
PE—Propeller Swing or Electric Motor
PS—Propeller Swing

Engine Manufacturers

(1)—Akron Aircraft Inc.
(2)—Monocoupe Corp.
(3)—Lenape Aircraft Motors Inc.
(4)—Aviation Mfg. Corp.
(5)—Sky Motors
(6)—Aircooled Motors Corp.

Automotive Diesel and Other Heavy Oil Engines

Engine Make and Model	Designed For	Type	Number of Cylinders—Bore and Stroke	Piston Displacement (Cu. In.)	Maximum Intermittant Hp. at Specified R.P.M.	Maximum Continuous Hp. at Specified R.P.M.	Compression Ratio —to 1	Cycle	Compression Pressure at Specified R.P.M.	Maximum Pressure (Lbs. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lbs. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Maximum Torque in Lb. Ft. at Specified R.P.M.	Weight Equipped (Lb.)
GENERAL														
Allis-Chalmers.......LO	Tr	DI	6-5¼x6½	844	97-1050	86-1050	6.5	4	150-500	450	77	38.0	560-750	3275
Allis-Chalmers.......SO	Tr	DI	4-5¾x6½	675	77-1050	68-1050	6.5	4	155-550	450	76	37.4	440-750	2550
Allis-Chalmers.......KO	Tr	DI	4-5¼x6½	563	63-1050	56-1050	6.5	4	155-500	450	75	38.9	370-750	2180
Atlas Imperial.......2AM115	M	DI	2-4¾x6½	230	....	18-950	15.0	4	520-950	675	65	105.6	....	1900
Atlas Imperial...(5) 4EM253	M	DI	4-6¼x8¼	1012	....	90-900	15.0	4	510-900	750	78	....	....	....
Buda.......4DT-212	C, T, Tr, R	AC	4-3⅝x5⅛	212	52-2300	40-1800	14.5	4	390-600	725	83	23.8	152-1400	955
Buda.......4DTM-212	M	AC	4-3⅝x5⅛	212	52-2300	40-1800	14.5	4	390-600	725	83	25.0	152-1400	1000
Buda.......6DT-278	C, T, Tr, B	AC	6-3⅝x4½	278	72-2600	50-1800	14.5	4	390-600	725	79	25.0	196-1400	1250
Buda.......6DT-294	C, T, Tr, B	AC	6-3⅝x4¾	294	75-2400	54-1800	14.5	4	390-600	725	81	23.1	210-1400	1250
Buda.......6DT-317	C, T, Tr, B	AC	6-3⅝x5⅛	317	81-2300	68-1800	14.5	4	390-600	725	94	16.7	210-1400	1133
Buda.......6DTM-317	M	AC	6-3⅝x5⅛	317	81-2300	68-1800	14.5	4	390-600	725	94	18.4	210-1400	1250
Buda.......6DT-468	T, Tr, B	AC	6-4¼x5½	468	96-2000	75-1600	14.2	4	390-600	725	79	19.1	344-1200	1435
Buda.......6DTM-468	M	AC	6-4¼x5½	468	96-2000	75-1600	14.2	4	390-600	725	79	23.7	344-1200	1775
Buda.......6DH-691	T, Tr, R	AC	6-4¾x6½	691	123-1700	85-1200	13.7	4	370-600	625	81	26.7	504-1100	2270
Buda.......6DHM-691	M	AC	6-4¾x6½	691	135-1700	124-1500	13.7	4	370-600	625	95	21.8	450-1100	2700
Buda.......6DC-691	T, Tr, R	AC	6-4¾x6½	691	130-1800	86-1200	13.7	4	390-600	725	82	....	506-1000	....
Buda.......6DCM-691	M	AC	6-4¾x6½	691	130-1800	86-1200	13.7	4	390-600	725	82	....	506-1000	....
Buda.......6DC-844	T, Tr, R	AC	6-5¼x6½	844	158-1800	104-1200	13.6	4	390-600	725	81	....	600-1050	....
Buda.......6DCM-844	M	AC	6-5¼x6½	844	158-1800	104-1200	13.6	4	390-600	725	81	....	600-1050	....
Buda.......6DH-909	T,Tr,B,R,I	AC	6-5¼x7	909	155-1500	117-1200	13.7	4	390-600	725	85	25.7	644-900	3010
Buda.......6DHM-909	M	AC	6-5¼x7	909	155-1500	117-1200	13.7	4	390-600	725	85	28.6	650-900	3350
Buda.......6DH-1611	R, I	AC	6-6¼x8¾	1611	196-1100	163-1000	12.0	4	370-600	625	80	42.1	1130-600	6875
Buda.......6DH-1742	R, I	AC	6-6½x8¾	1742	210-1100	176-1000	13.2	4	390-600	725	80	34.6	1210-650	6100
Buda.......6DHM-1742	M	AC	6-6½x8¾	1742	210-1100	176-1000	13.2	4	390-600	725	80	36.9	1210-650	6500
Buda.......6DH-1879	R, I	AC	6-6¾x8¾	1879	221-1100	185-1000	13.2	4	390-600	725	78	....	1270-700	....
Caterpillar.......D-6600	T, Tr, M, R	PC	3-5¾x8	623	60-850	45-850	16.0	4	....	....	67	72.4	396-650	3260
Caterpillar.......D-3400	T, Tr, M	PC	4-3¾x5	221	32-1525	24-1525	17.0	4	....	....	56	75.9	128-1000	1820
Caterpillar.......D-4400	T,Tr,B,M,R	PC	4-4¼x5½	312	44-1400	33-1400	17.0	4	....	....	60	68.5	180-900	2260
Caterpillar.......D-4400	M	PC	4-4¼x5½	312	....	35-1500	17.0	4	....	....	59	69.4	138-900	2430
Caterpillar.......D-7700	T, Tr, M, R	PC	4-5¼x8	693	66-850	50-850	16.0	4	....	....	67	86.0	426-700	4300
Caterpillar.......D-8800	T, Tr, M, R	PC	4-5¾x8	831	80-850	60-850	16.0	4	....	....	67	72.7	513-700	4360
Caterpillar.......D-468	T, B	PC	6-4¼x5½	468	90-1800	....		4	....	....	....	....	305-900	2120
Caterpillar.......D-4600	T,Tr,B,M,R	PC	6-4¼x5½	468	66-1400	45-1400	17.0	4	....	....	54	66.4	274-900	2990
Caterpillar.......D-4600	M	PC	6-4¼x5½	468	....	55-1500	17.0	4	....	....	62	56.9	224-900	3130
Caterpillar.......D-11000	T, Tr, M, R	PC	6-5¼x8	1039	100-850	75-850	16.0	4	....	....	67	70.7	645-650	5300
Caterpillar.......D-11000	M	PC	6-5¼x8	1039	....	80-900	16.0	4	....	....	68	73.1	510-700	5850
Caterpillar.......D-13000	T, Tr, M, R	PC	6-5¾x8	1246	125-850	95-850	16.0	4	....	....	71	56.8	824-650	5400
Caterpillar.......D-13000	M	PC	6-5¾x8	1246	....	100-900	16.0	4	....	....	71	59.3	635-700	5930
Caterpillar.......D-17000	T, Tr, M, R	PC	8-5¾x8	1662	160-850	120-850	16.0	4	....	....	67	66.7	1020-650	8000
Caterpillar.......D-17000	M	PC	8-5¾x8	1662	....	135-900	16.0	4	....	....	71	59.6	845-700	8045
Cooper-Bessemer....(1) EN	M	DI	8-8x10½	4222	410-900	325-720	....	4	▼	800	85	52.4	3300-600	17000
Cooper-Bessemer....(1) GN	M	DI	8-10½x13½	9353	750-750	510-514	....	4	▼	750	84	68.6	7200-450	35000
Cummins.......A	T,Tr,B,M,R	DI	6-4x5	477	100-2200	85-2200	....	4	....	....	64	15.4	270-1200	1310
Cummins.......HBS	T,Tr,B,M,R	DI	6-4⅞x6	672	200-1800	175-1800	....	4	....	....	114	14.3	670-1000	2500
Cummins.......H	T,Tr,B,R	DI	6-4⅞x6	672	150-1800	125-1800	....	4	....	....	82	17.3	500-1000	2160
Dodge.......T-106	T	AC	6-3¾x5	331	....	95-2600	14.7	4	450-....	750	88	13.6	226-1000	1290
Fairbanks-Morse..(2)36A4¼	M, R, I	TC	6-4¼x6	510	75-1200	60-1200	16.8	4	560-1200	750	77	....	330-1050	....
Fairbanks-Morse..(3)36A5½	M, R, I	TC	8-5½x7½	1424	200-1200	160-1200	14.8	4	475-1200	750	74	....	880-1000	....
Fairbanks-Morse....(1)46A8	M, R, I	DI	8-8x10½	4223	432-900	360-900	14.9	4	485-900	800	75	....	2760-600	....
General Motors.......6-71	T, Tr, B, M	DI	6-4¼x5	425	165-2000	123-2000	16.0	2	500-1000	980	57	13.0†	525-1000	1537†
General Motors.......4-71	T, Tr, B, M	DI	4-4¼x5	284	110-2000	82-2000	16.0	2	500-1000	980	57	15.9†	350-1000	1308†
General Motors.......3-71	T, Tr, B, M	DI	3-4¼x5	213	83-2000	62-2000	16.0	2	500-1000	980	57	19.1†	262-1000	1186†
Gray Marine....(6) GMD-2	M	DI	2-4¼x5	142	55-2000	40-1200	16.0	2	500-1000	980	93	....	....	....
Gray Marine....(7) GMD-4	M	DI	4-4¼x5	284	110-2000	84-1200	16.0	2	500-1000	980	97	22.6	....	1900

Engine Make and Model	Valves: Arrangement	Intake Port Diameter and Lift (In.)	Exhaust Port Diameter and Lift (In.)	Timing (Degrees): Intake Opens	Intake Closes	Exhaust Open	Exhaust Closes	Pistons: Material	Length (In.)	No. of Rings per Piston	Weight with Rings and Pin (Lb.)	Connecting Rods: Material	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Injection Valve: Value Type, Open or Closed	Type Orifices—Single, Multiple or Pintle	Injection Pressure (Lbs. per Sq. In.)	Fuel Consumption at Rated Load (Lb. per B. Hp. Hr.)	Starting Method
Allis-Chalmers.......LO	VI	2.25-.500	1.87-.500	5A	40AB	44BB	9A	TCI	8.18	4	11.10	1045	13.00	11.00	C	Mul	1300	.48	H,E
Allis-Chalmers.......SO	VI	2.25-.490	2.00-.490	TC	45AB	49BB	19A	TCI	8.50	4	12.00	1045	13.00	12.00	C	Mul	1300	.50	H,E
Allis-Chalmers.......KO	VI	2.25-.500	1.87-.500	5A	40AB	44BB	9A	TCI	8.18	4	11.10	1045	13.00	11.00	C	Mul	1300	.49	H,E
Atlas Imperial.......2AM115	VI	1.62-.390	1.50-.468	5B	35AB	40BB	TC	CI	8.25	6	11.50	1040	13.00	10.80	C	Mul	3500	.42	Ele
Atlas Imperial...(5) 4EM253	VI	2.31-.562	2.00-.656	8B	35AB	35BB	8A	CIA	9.75	6	26.00	1040	17.75	29.50	C	Mul	....	.39	Air
Buda.......4DT-212	VI	1.37-.486	1.18-.486	20B	38AB	45BB	13A	AL	4.93	5	3.00	1035	9.50	3.41	C	Pin	2000	.49	Ele
Buda.......4DTM-212	VI	1.37-.486	1.18-.486	20B	38AB	45BB	13A	AL	4.93	5	3.00	1035	9.50	3.41	C	Pin	2000	.47	Ele
Buda.......6DT-278	VI	1.37-.486	1.18-.486	20B	38AB	45BB	13A	AL	5.06	5	3.00	1035	9.50	3.41	C	Pin	2000	.47	Ele
Buda.......6DT-294	VI	1.37-.486	1.18-.486	20B	38AB	45BB	13A	AL	4.93	5	3.00	1035	9.50	3.41	C	Pin	2000	.47	Ele
Buda.......6DT-317	VI	1.37-.486	1.18-.486	20B	38AB	45BB	13A	AL	4.93	5	3.00	1035	9.50	3.41	C	Pin	2000	.47	Ele
Buda.......6DTM-317	VI	1.37-.486	1.18-.486	20B	38AB	45BB	13A	AL	4.93	5	3.00	1035	9.50	3.41	C	Pin	2000	.47	Ele
Buda.......6DT-468	VI	1.59-.476	1.37-.476	12B	36AB	35BB	6A	AL	5.25	5	4.48	6140	11.00	4.87	C	Pin	2000	.47	Ele
Buda.......6DTM-468	VI	1.59-.476	1.37-.476	12B	36AB	35BB	6A	AL	5.25	5	4.48	6140	11.00	4.87	C	Pin	2000	.47	Ele
Buda.......6DH-691	VI	1.72-.516	1.56-.516	15B	35AB	40BB	10A	AL	6.00	5	5.43	6140	12.50	10.25	C	Pin	2000	.47	Ele
Buda.......6DHM-691	VI	1.72-.516	1.56-.516	15B	35AB	40BB	10A	AL	6.00	5	5.43	6140	12.50	10.25	C	Pin	2000	.47	Ele
Buda.......6DC-691	VI	1.72-.516	1.56-.516	15B	35AB	40BB	10A	AL	6.00	5	5.43	6140	12.50	10.25	C	Pin	2000	.43	Ele
Buda.......6DCM-691	VI	1.72-.516	1.56-.516	15B	35AB	40BB	10A	AL	6.00	5	5.43	6140	12.50	10.25	C	Pin	2000	.43	Ele
Buda.......6DC-844	VI	1.72-.516	1.56-.516	15B	35AB	40BB	10A	AL	6.00	5	....	6140	12.50	10.25	C	Pin	2000	.42	Ele
Buda.......6DCM-844	VI	1.72-.516	1.56-.516	15B	35AB	40BB	10A	AL	6.00	5	....	6140	12.50	10.25	C	Pin	2000	.42	Ele
Buda.......6DH-909	VI	1.90-.540	1.78-.540	17B	33AB	39BB	11A	AL	8.00	5	9.30	6140	14.25	13.10	C	Pin	1600	.47	E,G
Buda.......6DHM-909	VI	1.90-.540	1.78-.540	17B	33AB	39BB	11A	AL	8.00	5	9.30	6140	14.25	13.10	C	Pin	1600	.47	E,G
Buda.......6DH-1611	VI	2.37-.687	2.12-.687	20B	35AB	40BB	15A	AL	9.31	5	17.50	1035	17.75	27.00	C	Pin	1600	.44	E,G
Buda.......6DH-1742	VI	2.37-.687	2.12-.687	20B	35AB	40BB	15A	AL	9.31	5	17.50	1035	17.25	27.00	C	Pin	1800	.42	E,G
Buda.......6DHM-1742	VI	2.37-.687	2.12-.687	20B	35AB	40BB	15A	AL	9.31	5	17.50	1035	17.25	27.00	C	Pin	1800	.42	E,G
Buda.......6DH-1879	VI	2.53-.687	....-.687	20B	35AB	40BB	15A	A-132	9.31	5	19.19	1035	17.75	28.51	C	Pin	1800	.45	E,G
Caterpillar.......D-6600	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.46	E,G
Caterpillar.......D-3400	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1500	.50	E,G
Caterpillar.......D-4400	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1500	.46	E,G
Caterpillar.......D-4400	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1500	.47	E,G
Caterpillar.......D-7700	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.46	E,G
Caterpillar.......D-8800	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.44	E,G
Caterpillar.......D-468	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	....	.47	Ele
Caterpillar.......D-4600	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1500	.46	E,G
Caterpillar.......D-4600	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1500	.45	E,G
Caterpillar.......D-11000	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.45	E,G
Caterpillar.......D-11000	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.42	E,G
Caterpillar.......D-13000	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.45	E,G
Caterpillar.......D-13000	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.42	E,G
Caterpillar.......D-17000	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.44	E,G
Caterpillar.......D-17000	VI	....	....	....	....	....	....	AL	....	6	....	....	....	....	C	Sin	1750	.43	E,G
Cooper-Bessemer....(1) EN	VI	3.12-.757	2.65-.757	20B	35AB	35BB	20A	AL	14.03	6	28.75*	3140	21.00	54.00°	C	Mul	3000	.40	A,E
Cooper-Bessemer....(1) GN	VI	4.00-1.12	3.75-1.12	20B	35AB	35BB	20A	AL	17.17	7	58.00*	1040	27.00	135.75°	C	Mul	6000	.40	A,E
Cummins.......A	VI	1.37-.406	1.37-.406	6B	46AB	50BB	14A	CIA	5.06	5	5.30	4130	12.00	6.24	....	Mul	....	.50	Ele
Cummins.......HBS	VI	1.93-.500	1.93-.500	6B	46AB	50BB	14A	CIA	6.25	5	10.12	4130	12.00	10.06	....	Mul	....	.55	Ele
Cummins.......H	VI	1.93-.500	1.93-.500	6B	46AB	50BB	14A	CIA	6.25	5	10.12	4130	12.00	10.06	....	Mul	....	.50	Ele
Dodge.......T-106	VI	1.54-.375	1.31-.375	31B	49AB	47BB	17A	Als	5.46	5	2.25	MS	10.43	....	C	Pin	2000	.45	Ele
Fairbanks-Morse..(2)36A4¼	VI	....	....	22B	48AB	64BB	18A	....	....	....	....	....	....	....	C	Pin	1700	.48	E,G
Fairbanks-Morse..(3)36A5½	VI	....	....	8B	52AB	64BB	1A	CI	....	....	....	....	....	....	C	Pin	1700	.48	A,E,G
Fairbanks-Morse....(1)46A8	VI	....	....	4B	40AB	54BB	3A	CI	....	....	....	....	....	....	C	Mul	3000	.33	Air
General Motors.......6-71	VI	(b)	1.25-.375 (a)	48BB‡	48AB‡	35½BB	49½AB	AT	6.00	6	7.00	T-1340	10.12	6.80	C	Mul	(c)	.45	Ele
General Motors.......4-71	VI	(b)	1.25-.375 (a)	48BB‡	48AB‡	35½BB	49½AB	AT	6.00	6	7.00	T-1340	10.12	6.80	C	Mul	(c)	.45	Ele
General Motors.......3-71	VI	(b)	1.25-.375 (a)	48BB‡	48AB‡	35½BB	49½AB	AT	6.00	6	7.00	T-1340	10.12	6.80	C	Mul	(c)	.45	Ele
Gray Marine....(6) GMD-2	VI	....	....	....	....	....	....	PI	6.00	6	7.00	CMS	10.12	6.80	....	Mul	(c)	.45	Ele
Gray Marine....(7) GMD-4	VI	....	....	....	....	....	....	PI	6.00	6	7.00	CMS	10.12	6.80	....	Mul	(c)	.45	Ele

Hercules	DIXB	Tr, M	TC	2-3¾x4½	99	24-1800	19-1400	15.5	4	500-1000	750	109	32.1	81-1400	610	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	3.56	CNM	8.00	5.31	C	Pin	1650	.44	H,E
Hercules	DIXC	Tr, M	TC	2-4x4½	113	27-1800	18-1200	15.5	4	500-1000	750	105	33.9	81-1400	610	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	4.00	CNM	8.00	5.31	C	Pin	1650	.42	H,E
Hercules	DIXD	Tr, M	TC	2-4¼x4½	127	27-1600	17-1000	15.5	4	500-1000	750	106	35.9	91-1300	610	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	4.47	CNM	8.00	5.31	C	Pin	1650	.42	H,E
Hercules	DOOB	T, Tr	TC	4-3¾x4½	199	62-2600	48-1800	14.5	4	500-1000	750	106	15.6	143-1500	750	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	3.56	CNM	8.00	5.31	C	Pin	1650	.45	E,G
Hercules	DOOC	T, Tr	TC	4-4x4½	226	70-2600	55-1800	14.5	4	500-1000	750	107	13.6	162-1400	750	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	4.00	CNM	8.00	5.31	C	Pin	1650	.45	E,G
Hercules	DOOD	T, Tr	TC	4-4¼x4½	255	77-2400	55-1600	14.5	4	500-1000	750	107	13.6	180-1400	750	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	4.47	CNM	8.00	5.31	C	Pin	1650	.44	E,G
Hercules	DJXB	T,Tr,B,M,R	TC	6-3½x4½	260	74-2600	59-1800	14.5	4	500-1000	750	100	14.8	178-1400	875	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	3.12	CNM	8.00	5.31	C	Pin	1650	.45	E,G
Hercules	DJXC	T,Tr,B,M,R	TC	6-3¾x4½	298	83-2600	70-1800	14.5	4	500-1000	750	103	12.5	208-1500	875	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	3.56	CNM	8.00	5.31	C	Pin	1650	.45	E,G
Hercules	DRXB	T,Tr,B,M,R	TC	6-4⅜x5¼	474	120-2000	104-1600	14.5	4	475-800	750	109	13.8	350-1300	1435	VI	2.00-.395	1.37-.395	12B	44AB	44BB	12A	AL	6.84	6	7.09	CNM	9.37	8.59	C	Pin	1650	.42	E,G
Hercules	DRXC	T,Tr,B,M,R	TC	6-4⅝x5¼	529	100-1400	72-1000	14.5	4	475-800	750	108	19.9	185-1100	1435	VI	2.00-.395	1.37-.395	12B	44AB	44BB	12A	AL	6.84	6	7.69	CNM	9.37	8.59	C	Pin	1650	.42	E,G
Hercules	DFXB	T,B,M,R	TC	6-5x6	707	177-1800	142-1400	14.5	4	500-500	750	114	16.9	530-1400	2400	VI	2.37-.500	1.62-.500	5B	50AB	45BB	10A	AL	7.53	6	9.94	CNM	12.00	13.75	C	Pin	1650	.42	Ele
Hercules	DHXB	T,Tr,B,M,R	TC	6-5x6	707	176-1800	142-1400	14.5	4	475-800	750	114	17.6	530-1400	2500	VI	2.37-.500	1.62-.500	5B	50AB	45BB	10A	AL	7.53	6	9.94	CNM	12.00	13.00	C	Pin	1650	.41	E,G
Hercules	DFXC	T,B,M,R	TC	6-5¼x6	779	191-1800	156-1400	14.5	4	500-500	750	114	15.4	585-1300	2400	VI	2.37-.500	1.62-.500	5B	50AB	45BB	10A	AL	7.53	6	11.69	CNM	12.00	13.75	C	Pin	1650	.42	Ele
Hercules	DFXD	T,B,M,R	TC	6-5½x6	855	193-1600	148-1200	14.5	4	500-500	750	114	16.2	645-1350	2400	VI	2.37-.500	1.62-.500	5B	50AB	45BB	10A	AL	7.53	6	12.37	CNM	12.00	13.75	C	Pin	1650	.42	Ele
Hercules	DHXC	T,Tr,B,M,R	TC	6-5½x6	855	...	127-1000	14.5	4	475-600	750	118	19.7	675-875	2500	VI	2.37-.500	1.62-.500	5B	50AB	45BB	10A	AL	7.53	6	11.69	CNM	12.00	13.00	C	Pin	1650	.40	E,G
Hill	2R	M, Sta	PC	2-3½x5½	106	20-1800	16-1800	15.0	4	...	...	66	65.6	...	1050	VI	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Sin	...	...	Ele
Hill	(1) 4C	M, Sta	PC	4-3½x6	231	45-1800	40-1800	15.0	4	...	...	76	30.0	...	1200	VI	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Sin	...	...	Ele
Hill	(8) 6B	M, Sta	PC	6-5x7	824	95-1000	65-720	15.0	4	...	...	87	69.2	...	4500	VI	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Sin	...	...	A,E
Hill	(1) 4A	M, Sta	PC	4-6x10	1131	100-800	80-800	15.0	4	...	...	70	87.5	...	7000	VI	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Sin	...	...	Air
International	PD-40	Tr, M, Pu	PC	4-4¾x6½	461	63-1250	50-1250	14.2	4	475-1250	...	69	38.0	306-600	1900	VI	2.03-.502	1.53-.502	10B	25AB	43BB	10A	AL	6.18	5	8.58	1040	13.25	11.56	C	Sin	2500	...	(x)
International	PD-80	Tr, M, Pu	PC	6-4¾x6½	691	100-1400	80-1400	14.2	4	475-1400	...	65	32.5	418-750	2600	VI	2.03-.502	1.53-.502	10B	25AB	43BB	10A	AL	6.18	5	8.58	1040	13.25	11.56	C	Sin	1500	...	(x)
Kermath	DOO	M	TC	4-4x4½	226	70-2600	55-1800	16.0	4	475-1000	750	107	21.8	160-1500	1200	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	3.55	CNM	8.00	4.90	C	Pin	1650	.45	Ele
Kermath	DJXC	M	TC	6-3¾x4½	298	84-2600	69-1800	16.0	4	475-1000	750	102	19.6	208-1350	1355	VI	1.62-.375	1.12-.375	12B	44AB	44BB	12A	AL	4.84	6	3.55	CNM	8.00	4.90	C	Pin	1650	.44	Ele
Kermath	DRX	M	TC	6-4⅜x5¼	474	120-2000	104-1600	14.5	4	475-1000	750	109	20.2	350-1300	2100	VI	2.00-.395	1.37-.395	12B	44AB	44BB	12A	AL	6.84	6	7.10	CNM	9.37	9.20	C	Pin	1650	.40	Ele
Kermath	DHX	M	TC	6-5x6	707	160-1600	142-1400	14.5	4	475-1000	750	113	22.4	535-1400	3182	VI	2.37-.500	1.62-.500	5B	50AB	45BB	10A	AL	7.53	6	9.53	CNM	12.00	11.70	C	Pin	1650	.40	Ele
Mack-Lanova	ED	T, Tr, B	LE	6-4⅜x5¾	519	133-2200	131-2000	14.5	4	480-1000	...	100	16.0	382-1200	2094	VI	1.64-.500	1.64-.500	20B	35AB	42BB	13A	AL	5.75	5	4.61	CMS	11.25	6.40	C	Pin	1725	.47	Ele
Mack-Lanova	Y	M	LE	6-4⅜x5¾	519	120-1800	120-1800	14.5	4	480-1000	...	102	20.0	382-1200	2400	VI	1.64-.500	1.64-.500	20B	35AB	42BB	13A	AL	5.75	5	4.61	CMS	11.25	6.40	C	Pin	1725	...	Ele
Rd.Wg.-Hesselman	35-40HP	M	DI	4-3¾x4¾	210	42-2000	35-1500	6.2	4	125-1000	450	88	24.3	122-1200	850	VI	1.62-.375	1.25-.375	5B	40AB	40BB	15A	CI	4.56	4	3.80	1020	8.75	2.87	O	Mul	1200	.56	Ele
Rd.Wg.-Hesselman	55-60HP	M	DI	4-4⅝x5¼	353	60-1600	55-1400	6.2	4	125-1000	450	88	21.8	230-800	1200	VI	1.75-.450	1.50-.450	TC	40AB	40BB	10A	CI	5.96	4	6.00	1020	10.50	5.30	O	Mul	1200	.58	Ele
Rd.Wg.-Hesselman	65-75HP	M	DI	6-3¾x4¼	282	83-2800	59-1800	6.4	4	135-1000	450	92	16.1	174-1400	950	VI	1.62-.375	1.25-.375	5A	47AB	45BB	10A	AL	4.87	4	2.56	1045	8.00	2.56	O	Mul	1200	.56	Ele
Rd.Wg.-Hessel	160-180HP	M	DI	6-6½x7	1395	170-1125	165-1050	5.6	4	125-1000	450	89	34.0	900-550	5600	VI	2.50-.710	2.25-.710	5B	40AB	40BB	5A	CI	9.25	4	20.50	1045	15.37	19.00	O	Mul	1200	.57	Ele
Rd.Wg.-Hessel	180-200HP	M	DI	6-7x7	1616	196-1125	188-1050	5.5	4	125-1000	450	88	30.3	1030-550	5700	VI	2.50-.710	2.25-.710	5B	40AB	40BB	5A	CI	9.25	4	24.75	1045	15.37	19.00	O	Mul	1200	.57	Ele
Sterling	CD-425	M	...	4-4¼x5$\frac{7}{16}$	620	150-1200	135-1200	16.0	2	640-1200	1000	72	31.7	657-1200	4275	...	...	...	44BB♦	63AB♦	73BB♦	57AB♦	CI	6.15	7	11.00	...	...	...	C	Sin	2250	.45	Ele
Stover	D-5	M, Sta	AC	1-3⅞x5¼	62	7½-1200	6½-1200	16.0	4	450-1200	...	69	115.4	30-1200	750	VI	1.37-.296	1.37-.296	15B	25AB	35BB	10A	CI	6.50	6	7.25	3135	11.75	8.50	C	Pin	1725	.49	H,E
Stover	D-7	M, Sta	AC	1-4¼x5¼	74	9¾-1200	8¾-1200	16.0	4	450-1200	...	78	87.4	40-1200	765	VI	1.50-.296	1.37-.296	15B	25AB	35BB	10A	CI	6.50	6	7.75	3135	11.75	8.50	C	Pin	1725	.49	H,E
Stover	D-10	M, Sta	AC	1-5x6½	128	13-1200	11½-1200	15.0	4	450-1200	...	59	99.2	60-1200	1140	VI	1.84-.375	1.84-.375	15B	25AB	35BB	10A	CI	8.00	6	15.00	3135	14.00	14.50	C	Pin	1725	.51	H,E
Stover	D-15	M, Sta	AC	1-5¾x6½	154	17-1200	16-1200	15.0	4	450-1200	...	68	78.1	75-1200	1250	VI	1.84-.375	1.84-.375	15B	25AB	35BB	10A	CI	8.00	6	15.50	3135	14.00	14.50	C	Pin	1725	.51	H,E
Superior	MA-2	M	TC	2-4¼x5¾	183	29-1400	24-1400	11.8	4	360-700	675	74	41.7	134-1200	1000	VI	1.87-.432	1.50-.483	8B	39AB	39BB	8A	NI	6.68	6	9.40	4145	11.50	9.25	C	Pin	1600	...	Ele
Superior	MA-4	M	TC	4-4¼x5¾	366	62-1500	53-1500	11.8	4	360-700	675	76	31.2	267-1200	1650	VI	1.87-.432	1.50-.483	8B	39AB	39BB	8A	NI	6.68	6	9.40	4145	11.50	9.25	C	Pin	1600	...	Ele
Superior	MA-6	M	TC	6-4¼x5¾	549	100-1600	85-1600	11.8	4	360-700	675	77	27.0	400-1200	2300	VI	1.87-.432	1.50-.483	8B	39AB	39BB	8A	NI	6.68	6	9.40	4145	11.50	9.25	C	Pin	1600	...	Ele
Superior	MA-8	M	TC	8-4¼x5¾	732	150-1800	126-1800	11.8	4	360-700	675	76	25.4	533-1200	3200	VI	1.87-.432	1.50-.483	8B	39AB	39BB	8A	AL	6.68	5	5.25	4145	11.50	9.25	C	Pin	1600	...	Ele
Superior	MD-4	M	TC	4-5½x7	665	90-1200	75-	11.8	4	360-700	750	...	...	328-1200	...	VI	2.25-.675	1.87-.620	8B	39AB	39BB	8A	AL	8.00	5	9.41	1040	14.25	18.13	C	Pin	1600	.42	Ele
Superior	MD-6	M	TC	6-5½x7	998	170-1500	133-1400	11.8	4	360-700	750	75	31.9	727-1000	4250	VI	2.25-.675	1.87-.620	8B	39AB	39BB	8A	AL	8.00	5	9.41	1040	14.25	18.13	C	Pin	1600	.42	Ele
Superior	MD-8	M	TC	8-5½x7	1330	230-1500	176-1400	11.8	4	360-700	750	75	30.1	985-1000	5300	VI	2.25-.675	1.87-.620	8B	39AB	39BB	8A	AL	8.00	5	9.41	1040	14.25	18.13	C	Pin	1600	.42	Ele
Waukesha-Hess.	XBKH	T, M, I	DI	4-3¾x4¾	210	34-2000	31-1500	6.2	4	135-	500	78	23.1	122-1200	715	VI	1.62-.375	1.25-.375	5B	40AB	40BB	15A	CI	4.56	4	3.80	1045	8.75	2.87	O	Mul	1200	.56	H,E
Waukesha-Hess.	130HS	T, Tr	DI	4-3¾x5	221	47-2200	44-1800	5.9	4	135-	500	88	15.8	136-1000	695	VI	1.62-.445	1.25-.453	5A	40AB	45BB	10A	CI	5.12	4	3.60	1045	8.75	3.60	O	Mul	1200	.52	H,E
Waukesha-Hess.	130HL	T, Tr, I	DI	4-4x5	251	53-2200	50-1800	5.9	4	...	500	88	14.1	156-1000	705	VI	1.62-.445	1.25-.453	5A	40AB	45BB	10A	CI	5.12	4	...	1045	8.75	3.60	O	Mul	1200	.52	H,E
Waukesha-Hess.	VRZH	T, I	DI	4-4⅝x5¼	353	50-1600	48-1400	5.6	4	135-400	500	77	19.2	228-900	920	VI	1.75-.450	1.50-.450	TC	40AB	40BB	10A	CI	5.96	4	6.00	1045	10.50	5.30	O	Mul	1200	.58	H,E
Waukesha-Hess.	HBSH	M, I	DI	4-5x6½	511	60-1200	57-1050	5.6	4	135-400	500	84	32.9	336-600	1875	VI	2.00-.580	1.75-.580	10A	40AB	40BB	10A	CI	8.18	4	12.25	1045	13.25	9.30	O	Mul	1200	.56	Ele
Waukesha-Hess.	HBKH	M, I	DI	4-6x6½	735	84-1200	80-1050	5.5	4	135-400	500	82	23.8	455-700	1900	VI	2.37-.580	1.75-.580	10A	40AB	40BB	10A	CI	8.18	4	15.80	1045	13.25	9.30	O	Mul	1200	.56	Ele
Waukesha-Hess.	WBFH	I	DI	4-6½x8	1062	98-1050	94-950	5.4	4	135-400	500	74	34.0	665-600	3200	VI	2.50-.570	2.25-.570	TC	45AB	35BB	10A	CI	9.28	4	23.50	1045	18.00	17.40	O	Mul	1200	.57	Ele
Waukesha-Hess.	6BKH	T, B	DI	6-3¾x4¼	282	60-2600	52-1800	6.4	4	135-400	500	81	14.4	174-1400	750	VI	1.62-.375	1.25-.375	5A	47AB	40BB	10A	CI	4.87	4	2.56	1045	8.00	2.56	O	Mul	1200	.58	H,E
Waukesha-Hess.	140HS	T, B, I	DI	6-4¼x5½	468	97-2250	86-1500	6.0	4	135-400	500	97	16.3	345-1000	1400	VI	1.87-.531	1.37-.469	5A	45AB	40BB	10A	CI	6.50	4	...	1045	10.25	5.30	O	Mul	1200	.54	Ele
Waukesha-Hess.	140HK	T, B, I	DI	6-4⅝x5½	525	110-2250	97-1500	6.0	4	135-400	500	99	14.8	395-1000	1440	VI	1.87-.531	1.37-.469	5A	45AB	40BB	10A	CI	6.50	4	7.00	1045	10.25	5.30	O	Mul	1200	.54	Ele
Waukesha-Hess.	145HS	T, I	DI	6-4⅝x6	638	123-1800	112-1400	5.8	4	135-400	500	99	...	506-800	...	VI	1.87-.594	1.37-.531	5A	45AB	40BB	10A	CI	7.25	4	...	1045	11.75	13.30	O	Mul	1200	.53	Ele
Waukesha-Hess.	145HK	T, M, I	DI	6-5¼x6	779	152-1800	136-1400	5.8	4	135-400	500	99	...	620-800	...	VI	1.87-.594	1.37-.531	5A	45AB	45BB	10A	CI	7.25	4	18.40	1045	11.75	13.30	O	Mul	1200	.53	Ele
Waukesha-Hess.	6WALH	T, B, M, I	DI	6-5¾x6½	1013	152-1600	146-1300	5.7	4	135-400	500	88	21.6	690-600	3150	VI	2.37-.656	2.00-.656	TC	40AB	45BB	10A	CI	8.37	4	16.40	1045	13.25	12.20	O	Mul	1200	.52	E,G
Waukesha-Hess.	6WAKH	T,B,M,R,I	DI	6-6¼x6½	1196	181-1600	175-1300	5.6	4	135-400	500	89	18.3	805-600	3200	VI	2.37-.656	2.00-.656	TC	40AB	40BB	10A	CI	8.37	4	18.40	1045	13.25	12.20	O	Mul	1200	.52	E,G
Waukesha-Hess.	6ELH	I	DI	6-6¾x7	1395	146-1125	147-1050	5.4	4	135-400	500	80	33.7	900-500	4950	VI	2.50-.710	2.25-.710	5B	40AB	45BB	5A	CI	9.25	4	20.50	1045	15.37	19.60	O	Mul	1200	.53	E,G
Waukesha-Hess.	6EKH	I	DI	6-7x7	1616	171-1125	170-1050	5.3	4	135-400	500	79	29.2	980-500	4975	VI	2.50-.710	2.25-.710	5B	40AB	40BB	5A	CI	9.25	4	24.75	1045	15.37	19.60	O	Mul	1200	.53	E,G
Waukesha-Hess.	6NKH	M, I	DI	6-7x8½	1962	208-1050	200-900	5.2	4	135-400	500	90	25.2	1350-650	5050	VI	2.50-.710	2.25-.710	5B	40AB	40BB	5A	CI	9.25	4	24.75	1045	15.37	19.60	O	Mul	1200	.52	E,G
Waukesha-Hess.	6LRH	M, R, I	DI	6-8½x8½	2894	308-1050	282-900	4.8	4	135-400	500	86	28.2	1830-550	7950	VI	3.25-.710	2.75-.710	8A	40AB	40BB	10A	CI	11.65	5	50.00	1045	20.87	28.50	O	Mul	1200	.54	E,G
Witte	AD	Sta	PC	1-3¼x4½	37	4½-1200	4-1200	19.0	4	680-1200	...	71	114.5	19-1250	458	VI	1.31-.298	1.18-.298	8B	30AB	45BB	10A	NI	4.43	5	4.12	1045	8.50	3.50	C	Pin	2300	.51	H,E
Witte	LD	Sta	PC	1-4¼x5¼	74	11-1200	9-1200	17.0	4	585-1200	...	80	76.8	49-1500	691	VI	1.75-.422	1.75-.422	8B	30AB	45BB	10A	NI	6.12	5	9.81	1045	11.50	6.50	C	Pin	2300	.45	H,E
Witte	KD	Sta	PC	1-4¾x6	85	8-850	6-850	17.0	4	585-850	...	66	138.4	47-812	830	HI	1.56-.381	1.56-.381	6B	30AB	45BB	8A	NI	7.25	5	10.75	1045	15.00	10.00	C	Pin	2300	.50	H
Witte	MD	Sta	PC	1-5x8	157	14-720	12-720	17.0	4	585-720	...	84	104.1	105-750	1250	HI	1.75-.415	1.75-.415	6B	30AB	45BB	8A	NI	8.18	6	15.00	1045	18.00	20.00	C	Pin	2300	.40	H

ABBREVIATIONS

■—Without reduction gear; weight with reduction gear, 1310 lbs.
▾—370-400 P. S. I. compression
•—Weight without pin
°—Weight with piston pin
†—Weight of basic engine, not including generator, starter, fan, water and exhaust manifolds or engine mountings
♦—Opening of Transfer Ports

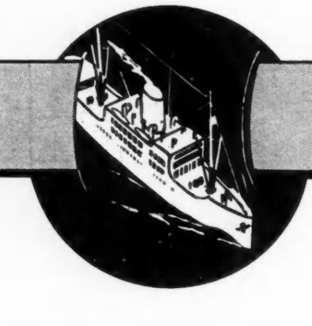
‡—Applies to opening and closing of Intake Ports
(1)—Also built in 6 cylinder model
(2)—Also built in 1, 2, 3, 4 and 8 cylinder models
(3)—Also built in 4 and 6 cylinder models
(4)—Also built in 4 cylinder model
(5)—Also built in 2, 3 and 6 cylinder models
(6)—Also built in 1 cylinder model
(7)—Also built in 3 and 6 cylinder models
(8)—Also built in 2, 3 and 4 cylinder models
(a)—Two exhaust valves per cylinder

A—After top center
A—Air (starting method)
AB—After bottom
AC—Air chamber
AE—Air and Electric
AEG—Air, electric or gas
AL—Aluminum alloy
Als—Aluminum alloy-steel strut
AT—Armasteel, tin plated
(b)—Two rows of $\frac{1}{16}$ diam. holes — 64 total in cylinder liner

B—Before top center
B—Buses
BB—Before bottom center
(c)—Up to 20,000 lbs. per sq. in.
C—Cars
C—Closed (valve type)
CI—Cast Iron
CIA—Cast Iron alloy
CMS—Chrome molybdenum steel
CNM—Chrome nickel molybdenum
DI—Direct Injection
E, G—Electric and Gas Engine
Ele—Electric
H—Hand

H, E—Hand and Electric
HI—Horizontally in-head
I—Industrial
LE—Lanova Energy Cell
M—Marine
MS—Manganese steel
Mul—Multiple
NI—Nickel Iron
O—Open
PC—Precombustion chamber
PI—Pearlitic malleable Iron

Pin—Pintle
Pu—Power unit
R—Rail cars
Sin—Single
Sta—Stationary
T—Trucks
TC—Top center
TC—Turbulence chamber
TCI—Tin plated cast iron
Tr—Tractors
VI—Vertically in-head
(x)—For starting only, gasoline and spark ignition



EXPORTS

Value of Leading U. S. Automotive Exports

Passenger Cars	$89,172,300
Passenger Cars, Used	841,188
Trucks, Buses and Chassis	71,422,015
Trucks and Buses, Used	178,431
Trailers	1,087,074
Engines for Assembly:	
Truck and Bus	3,433,085
Passenger Cars	2,402,817
Engines for Replacement	281,979
Parts for Assembly	43,478,038
Parts for Replacement	40,980,909
Auto Accessories	4,367,874
Pumps for Gasoline and Oil	1,216,839
Other Auto Service Equipment	4,198,935
Motorcycles	942,142
Motorcycle Parts and Accessories	287,990
Storage Batteries	2,049,367
Battery Chargers	267,801
Portable Electric Tools	1,490,856
Truck and Bus Casings	8,697,171
Auto Casings	9,521,574
Inner Tubes	1,602,098
Solid Tires	76,294
Tire Sundries and Repair Material	994,412
Aeronautical Products	117,604,168
Total	$406,595,357
CANADIAN	
Cars	$14,394,485
Trucks	8,156,528
Parts and Accessories	2,991,697
Tires and Tubes	8,023,335
Total	$33,566,045
Grand Total Exports of American Manufacture	$440,161,402

Leading Automotive Export Markets-1939

(U. S. Factory Shipments Only—Does Not Include Canadian Exports)

Passenger Cars and Chassis

Country of Destination	Value	Units
Union of South Africa	$12,566,402	21,723
Canada	10,706,346	15,544
Argentina	6,244,444	11,676
Sweden	6,140,825	10,771
Australia	4,552,516	11,683
Mexico	4,424,647	6,089
Belgium	4,050,075	7,536
Brazil	3,905,539	6,506
Colombia	2,922,980	3,679
Hawaii	2,728,121	3,746
Philippine Islands	2,332,827	3,215
Venezuela	2,267,200	3,170
British India	2,020,384	3,607
United Kingdom	1,619,076	2,217
Puerto Rico	1,491,150	1,969
Cuba	1,410,328	1,941
Egypt	1,112,703	1,457
Netherlands Indies	1,009,338	1,670
Finland	982,286	1,344
Denmark	952,190	2,037
Total	$73,439,377	121,580
Total all countries	$89,172,300	143,909

Trucks, Buses and Chassis

Country of Destination	Value	Units
Hong Kong	$4,496,023	6,808
British India	4,196,925	11,379
Canada	4,092,852	2,260
China	3,687,956	4,146
Venezuela	3,645,396	4,565
Brazil	3,437,391	6,194
Union of South Africa	3,280,764	6,756
Belgium	3,054,947	6,842
Argentina	2,796,189	5,567
Sweden	2,575,515	5,674
Colombia	2,495,615	3,155
Mexico	2,357,865	3,425
Philippine Islands	2,143,431	3,250
Spain	1,908,020	3,726
Australia	1,778,102	3,553
Egypt	1,425,825	2,618
Chile	1,218,410	1,611
Netherlands	1,211,082	1,594
French Indo-China	1,094,890	1,629
Japan	969,136	2,427
Total	$51,866,334	87,179
Total all countries	$71,422,015	116,913

American Passenger Car Exports—1939*

COUNTRIES	Not over $850		Over $850 but not over $1200		Over $1200 but not over $2000		Over $2000		Total 1939 New Passenger Cars		Total 1939 Second hand Passenger Cars	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Europe	29,252	$16,074,706	2,968	$2,837,416	359	$ 562,583	93	$ 231,349	32,672	$19,706,054	234	$ 132,096
North America	21,819	13,557,024	3,899	3,717,187	837	1,182,299	131	361,320	26,686	18,817,830	985	365,437
South America	24,867	14,250,288	2,752	2,655,174	441	606,970	48	118,853	28,108	17,631,285	154	98,715
Asia	11,379	6,790,745	1,210	1,172,047	229	334,340	49	125,168	12,867	8,422,300	85	66,492
Oceania	12,141	4,770,062	257	233,106	23	32,887	3	7,005	12,424	5,043,060	6	3,380
Africa	22,986	12,916,573	1,922	1,784,556	168	249,272	33	87,471	25,109	15,037,872	13	9,467
Total	122,444	$68,359,398	13,008	$12,399,486	2,057	$2,968,351	357	$ 931,166	137,866	$84,658,401	1,477	$ 675,587
Alaska	90	64,087	94	91,963	28	38,981	2	10,375	294	270,495	106	62,000
Hawaii	3,239	2,233,788	462	426,634	42	58,101	3	9,598	3,746	2,728,121	134	81,677
Puerto Rico	1,589	1,091,525	345	339,730	31	49,677	4	10,218	1,969	1,491,150	48	20,979
Virgin Islands	31	20,660	2	2,173	1	1,300			34	24,133	3	945
Grand Total	127,393	$71,769,458	13,911	$13,259,986	2,159	$3,116,410	366	$ 961,357	143,909	$89,172,300	1,768	$ 841,188

* Automotive-Aeronautics Division, Bureau of Foreign and Domestic Commerce

American Truck Exports—1939*

COUNTRIES	Under 1 Ton		1 Ton and not over $1\frac{1}{2}$ Tons		Over $1\frac{1}{2}$ Tons and not over $2\frac{1}{2}$ Tons		Over $2\frac{1}{2}$ Tons		Bus Chassis		Total 1939 Trucks, Buses and Chassis	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Europe	3,798	$1,395,448	20,948	$9,904,457	2,739	$2,100,527	1,175	$1,638,764	446	$ 304,980	29,106	$15,344,176
North America	1,650	913,520	4,576	2,987,636	1,062	1,045,719	1,360	3,658,451	68	162,516	8,716	8,767,842
South America	3,240	1,494,822	18,096	11,048,907	1,601	1,677,317	587	1,145,472	78	72,256	23,602	15,438,774
Asia	3,116	1,129,973	26,313	13,255,341	5,362	4,871,790	623	1,175,829	26	22,974	35,440	20,455,907
Oceania	1,510	584,572	1,938	1,015,195	536	445,462	45	90,008	5	10,474	4,034	2,145,711
Africa	3,706	1,562,800	8,972	4,695,862	806	623,901	270	452,170	13	17,471	13,767	7,352,204
Total	17,020	$7,081,135	80,843	$42,907,398	12,106	$10,764,716	4,060	$8,160,694	636	$ 590,671	114,665	$69,504,614
Alaska	42	26,449	87	77,152	57	70,236	36	77,695	5	5,455	273	300,078
Hawaii	429	245,755	284	208,542	47	54,906	59	223,895			819	733,098
Puerto Rico	189	108,356	739	504,314	173	191,704	41	71,116			1,142	875,490
Virgin Islands	5	2,573	9	6,162							14	8,735
Grand Total	17,685	$7,464,268	81,962	$43,703,568	12,383	$11,081,562	4,196	$8.533,400	641	$ 596,126	116,913	$71,422,015

* Automotive-Aeronautics Division, Bureau of Foreign and Domestic Commerce

AUTOMOTIVE INDUSTRIES *Just among Ourselves*

During the week of Feb. 11, business and technical organizations throughout the United States arranged dinners in honor of "Modern Pioneers," men who have contributed by invention to a higher standard of living. Of the many men whose work has meant much to the automotive industry and who were honored at regional dinners, this page pauses to talk about James F. Lincoln.

Because: During the week devoted to honoring the pioneers, the James F. Lincoln Arc Welding Foundation announced in a handsome brochure a $200,000 program of industrial awards (458 of them) for papers devoted to social progress achieved through arc welding, and

Because: This program and the vitality which distinguishes it are a prime example of the fact that "pioneers never stand still."

Two years ago, the Foundation announced its first program of cash awards for technical papers. Devoting $200,000 to such a project was an example of far-sighted thinking which transcended the boundaries of commercial enterprise and made the project one of benefit to the whole welding industry, certainly, and to the metal working industries in general.

A hundred and nine of the papers submitted in the first program were published by the Foundation in a fat volume titled "Arc Welding in Design, Manufacture and Construction." The papers themselves were amazing in their diversity and practicality. They summed up recent progress in arc welding technique and procedure in a way that left the road clear in only one direction—the future. They covered the industrial benefits and economies of a thousand ingenious applications of arc welding technique in a way which made it clear to the trustees of the Foundation that a new factor had emerged—the social and economic progress assisted by the use of arc welding.

The response to the first program of awards was of such magnitude that the directors of the Lincoln Electric Co. turned over to the Foundation another $200,000 to be expended in awards for a second series of papers on arc welding progress.

After careful thought on the part of the trustees of the Foundation, it was decided that the second program should cover a 2½-year period, in order to allow adequate time for the development of structures and designs, which might be stimulated into being by the announcement of the program.

It was decided further, that the second program should emphasize the social and economic benefits to the community of the developed ideas, as well as their commercial significance. Throughout the present program, it is the intention of the trustees to mold the thinking of the contestants in a way which will bring out, through the award program a tremendous amount of information on the economic and social benefits achieved through arc welding.

About the only restriction on the present program of awards is that those who submit papers must have been engaged, in some connection, in the actual design or construction of the project described in a paper. Otherwise, the program is broad enough to permit entry of any arc welding idea which can be demonstrated to benefit industry and the economic structure as a whole.

We particularly urge executives in plants which utilize arc welding in any way to familiarize themselves with the details of the award program, so that other members of their organizations can be encouraged to enter the contest. If you're interested, please correspond directly with the secretary, James F. Lincoln, Arc Welding Foundation, Cleveland, Ohio.

"Detroit—Dynamic City"

Arthur Pound, who wrote "The Turning Wheel" about the automobile industry and General Motors, who is a Michigander himself, and has a string of books to his credit which interpret American industry and agriculture in shirt-sleeves terms, has tried to interpret Detroit in a new book published by the Appleton-Century Co. The book is part of a series on American Cities, by various authors.

It covers the history, the tastes, and the industry of the automobile capital. It covers them sympathetically, but with a clear eye for some of the things which might be improved in the city itself.

E. H. Suydam has contributed illustrations which are a delight, and there are a lot of them.

If you are a Detroiter, or you come within Detroit's sphere of influence, you'll want a copy of the book to arrive at a better understanding of the city and its people. The book is recommended particularly to the thousands of people who visit Detroit sporadically on business, and who seldom have time to find out about the city's background. It seems to me that a copy of the book as a traveling companion on your next trip into Detroit would make you feel more in tune with the city when you arrived at Fort Street, the Central station or the airport.— HERBERT HOSKING.

MEN and MACHINES

DOMESTIC and foreign demand for American-made machine tools continues at an unprecedented rate. The machine tool industry's operating activity, as indicated by the index prepared by the National Machine Tool Builders' Association, stood at 93.3 per cent of capacity through January, 1940. The figure equals the level attained in December, 1939, and represents a sharp upward surge, as compared with January, 1939, of more than 77 per cent.

The industry has made substantial progress in solving the problems created by the heavy demand for its products and in this regard a statement made recently by J. E. Lovely, Association president, is especially interesting.

Mr. Lovely observes, "The industry has consistently endeavored to give domestic orders preference over foreign orders, with respect to delivery dates. In spite of the insistent foreign demand, many companies are telling foreign buyers that future orders will have to wait until requirements of domestic customers have been met.

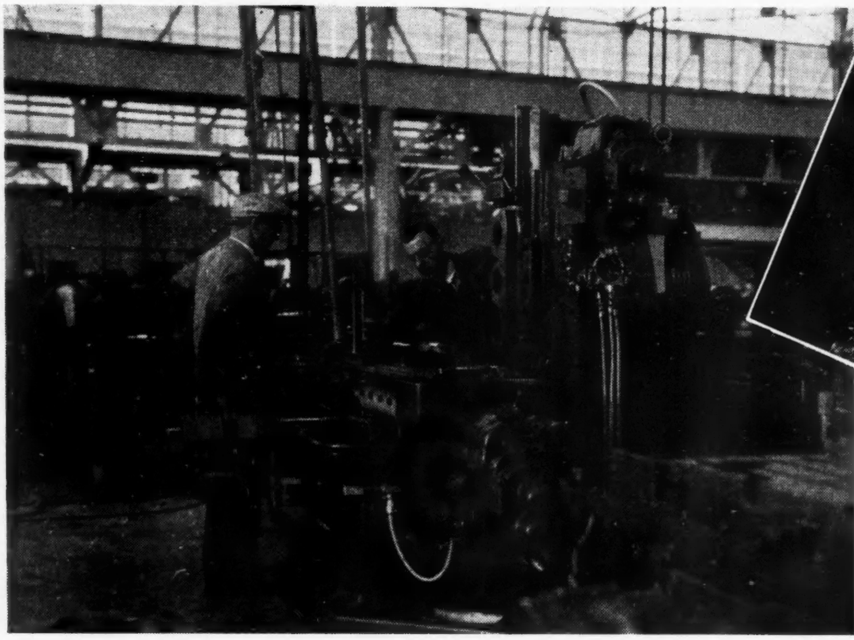
"Strenuous measures," he adds, "are being taken by the industry to increase output. New equipment has added substantially to plant facilities. In most cases it has seemed more practicable to secure the desired immediate set-up in production by increasing the productivity of existing plants, rather than attempting the building and equipping of new plants."

THERE has been, however, a considerable amount of new building. Among the larger plants erected recently are the new factory and office buildings which Pratt & Whitney now occupies at West Hartford, Conn. P&W had been at its old stand for 79 years and is justly proud of the modern structure designed especially for precision machine tool, small tool and gage manufacture by Albert Kahn, Inc. The new plant includes a one-story building almost 1000 ft. long and 550 ft. wide, a two-story office building and a two-story pattern storage building, garage and heating plant.

P&W's 23 old buildings, while satisfactory for light manufacturing, were not suitable for the increased weights of modern machines. Also, the many stories and separate buildings presented a serious problem in handling heavy castings and parts. About 10 years ago the heaviest machine manufactured by the company weighed approximately 12,000 lb. Today a machine may weigh as much as 80,000 lb. and the trend is definitely toward heavier machines.

APPARENTLY unhampered by the in-

A Keller automatic tool room machine in process of assembly in the new Pratt & Whitney plant at West Hartford, Conn.



A new 3½ in. RA-6 spindle Acme-Gridley bar automatic turning out speed clutch blanks at Chevrolet's Muncie, Ind., plant.

General Foundry & Mfg. Co., manufacturer of Meehanite brake drums, reduces scrap losses with this "dog house scrap record board." Names of molders whose scrap returns exceed predetermined percentage are placed in the dog houses at the left. Those whose scrap losses remain in lower brackets compete for monthly money prize.

tensified activity in production, the inventive genius of the machine tool industry continues to turn out a large number of new equipment developments and refinements. A surface analyzer designed by the Brush Development Co., Cleveland, for rapidly analyzing the topography of finished surfaces, is a particularly interesting new product.

The instrument, which was demonstrated in Detroit at the 1940 annual meeting of the Society of Automotive Engineers, furnishes an instantaneous and permanent record of surface irregularities which may be magnified as desired up to 100,000 times. Because of this magnification, satisfactory records may be made of surface irregularities smaller than 0.000001 in. These records show not only the amplitude, but also the form of the irregularities.

The Brush Model SA-1 surface analyzer consists of three principal units: 1. An analyzing head which explores the specimen surface. This head includes a piezo-electric crystal pickup actuated by a sapphire stylus. The stylus is provided with two types of motion, rotary and reciprocating; 2. A calibrating amplifier which magnifies the output of the pickup; 3. A direct inking oscillograph which makes an inked record of the magnified surface irregularities on a continuously moving strip of graph paper. The oscillograph direct inking pen is actuated by a piezo-electric crystal element.

Work station of 2000-ton Ajax forging press used at Buick for producing hypoid axle ring gears. Operations in this three-station die start with annealed blank in left foreground. Material is SAE 1320A and SAE 4120A.

The crystal element of the analyzing head has the property of generating a voltage proportional to the stylus deflection (amplitude). The calibrating amplifier magnifies the voltage as much as 50,000 times, sufficient to operate the crystal element of the direct inking oscillograph. The deflection of the pen of the oscillograph, since it is actuated by a crystal element, is proportional to this magnified voltage.

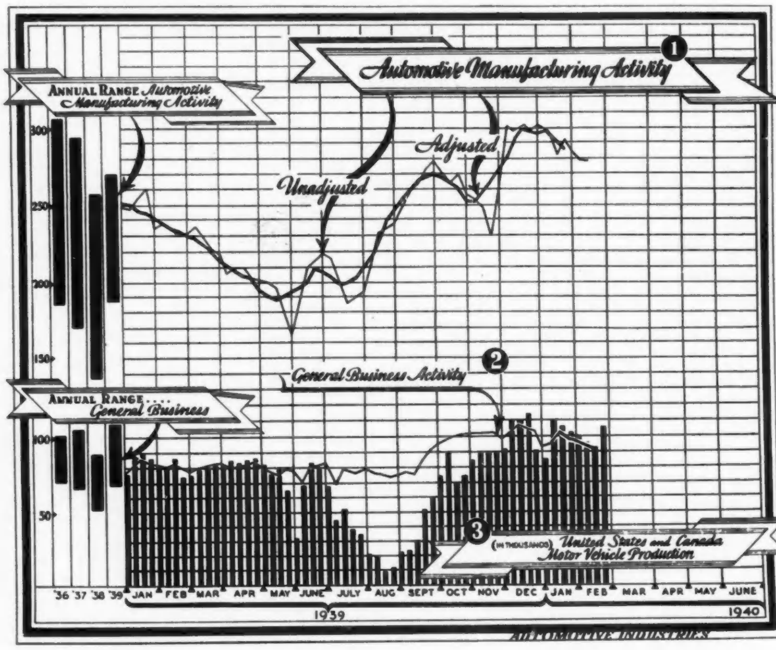
Because of these facts, the deflection of the pen of the oscillograph is proportional to the original deflection of the stylus of the analyzing head very much magnified by the mechanical linkages and calibrating amplifier.

An accurate, speedy abrasive cut-off machine, announced by the Delta Mfg. Co., Milwaukee, will cut such materials as steel, brass, copper, cast iron, monel metal, bakelite and all plastic materials, pipe, wire rope, Stellite, tool steel, manganese steel, fibrous material such as brake linings, tile brick, carbon, porcelain, slate hard rubber, concrete coping and sand cores. On metal it leaves the cut with a

(*Turn to page* 247, *please*)

BUSINESS IN BRIEF

Our own view of automotive production and sales: authoritative interpretation of general conditions



Weekly indexes of automotive general business charted

Month's Production Tops 400,000

PRODUCTION of cars and trucks for the last half of February, reacting to better than expected sales reports for the first 10-day period of the month, demonstrated a strong upswing which brought weekly totals almost back to the levels reached in January when the industry established a new high production record for the month.

Preliminary checks of factory schedules for the week ending Feb. 24 indicated that car and truck production for the week would be well over 100,000 units[3], in fact close to the 106,000 and 107,000 totals reached during the higher weeks in January. With the week ending March 2, which included four working days in February, giving all indications that production also would exceed 100,000 cars and trucks, it is reasonable to anticipate that at least 80,000 of this total can be credited to February.

On this basis, February production totals will exceed the 400,000 mark by several thousand units to put the month well ahead of the comparable period a year ago when 317,517 cars and trucks were turned out. Unlike January, however, the February total will not set a new high record although it will be the highest February since 1929 when 497,705 cars and trucks came off the lines. In 1929 new models were being introduced in January and production at that time reflected the usual initial rush to stock dealers whereas February's production is based entirely on the industry's sales record four and five months after the introductory period, and output does represent a new high since introductions were pushed ahead into the late fall.

First weeks in February saw manufacturers beginning to trim their schedules from the highs established in January, but unusually favorable sales reports for the first 10-day period, and preliminary reports on the second 10 days, saw a number of makers revising their monthly quotas upward.

The week ending Feb. 24 saw GM divisions producing better than 44,000 cars and trucks, a significant increase over the previous weeks with several divisions going back to five days after dropping to four at the beginning of the month. Chrysler divisions continued at approximately the rate in effect during January to account for better than 24,000 cars and trucks for the week ending Feb. 24, while Ford divisions continued on a four-day basis to produce better than 22,000 units.

Independents also reported increases with Packard and Studebaker leading this group followed by Hudson and Nash. Resumption of production by the latter, after a week of inventory, also helped to increase the industry's total.

AUTOMOTIVE MANUFACTURING ACTIVITY slowed slightly in the weeks ended Feb. 10 and 17, the unadjusted index charted herewith passing through the points 279 and 278, respectively. The adjusted index curve also continues downward, moving through 290 and 286 during the weeks ending Jan. 20 and Jan. 27, respectively.

[1] 1923 average = 100; [2] Prepared by Administrative and Research Corp., New York. 1926 = 100; [3] Estimated by J. A. Laansma, Detroit News Editor, AUTOMOTIVE INDUSTRIES.

NEWS OF THE INDUSTRY

Railway-Auto Plan to Be Inaugurated on May 1

New Traveler Service Calls for Expenditure of $1,500,000 for 2000 Five-Passenger Sedans

A travel service consolidating the mobility of the automobile with the high speed of modern railroad trains will be inaugurated May 1, by 11 western railroads. The new automobile affiliate of the railroads, Railway Extension, will spend $1,500,000 for 2000 motor cars, according to Edward M. O'Shea, president. The plan calls for the purchase of a complete new fleet of cars each year.

On Feb. 8, 1940, Hugh W. Siddall, chairman of the Trans-Continental Western Passenger Associations announced the adoption of the railway-auto plan whereby rail travelers will have available a motor car for use at their destination. More than 150 key cities are included in the plan. It is understood that the railroads will not share in the profits of the automobile service, their only profit under the plan being from additional passenger revenues.

The participating railroads are: Burlington Lines; Chicago and Eastern Illinois; Chicago, Milwaukee, St. Paul & Pacific; Chicago and North Western; Chicago, St. Paul, Minneapolis & Omaha; Great Northern; Illinois Central; Northern Pacific; Rock Island Lines; Santa Fe System Lines; Union Pacific Railroad.

Railway Extension, Inc., is headed by Edward M. O'Shea and R. H. Rogers of Lincoln, Neb. Main headquarters of Railway Extension, Inc., will be in Chicago, with branch offices in many western cities.

Under the train-auto plan a traveler may arrange for an automobile before leaving his home town, or after reaching the key city where he wishes to engage it. Advance reservations will, of course, assure the car being available when wanted. Railway Extension representatives will meet the passenger upon arrival of his train, where final arrangements are made.

The basis of rates for the automobiles, which includes gasoline, oil and maintenance as well as insurance protection will be as follows:

Eight cents a mile, subject to following minimum mileages:

Per hr.—10 mi. .... .80c
Per 12-hr. day—75 mi. $6.00
Per 24-hr. day—135 mi. $10.80
Per week—350 mi. $28.00
Per 24-hr. day after first week— 50 mi. —$4.00

Six and one-half cents a mi. subject to minimum of 1000 mi., $65.00 per week

The rental will be the same whether one or five persons occupy the automobile. Where passengers do not have an identification card, a cash deposit will be required. There are no extra charges. Should the passenger buy gas, oil or repairs, upon presentation of a receipted bill he is reimbursed.

The Brass-Hat Rack

"But really, Mr. Whiffle, don't you think the statistics in AUTOMOTIVE INDUSTRIES *would be more helpful to you?"*

NSPA Reports Increase In Automotive Sales

Automotive sales for January, 1940, according to the National Standard Parts Association, were 11 per cent ahead of December, 1939 and 12 per cent ahead of January last year.

The NSPA further reports that replacement parts shipped to wholesalers in January advanced five and one-half per cent over December and topped January a year ago by eight per cent.

The index prepared by NSPA also indicates that shop equipment and tools shipped to wholesalers in January registered 20 per cent ahead of December, putting January, 1940, 30 per cent ahead of January, 1939. Original equipment shipped to vehicle manufacturers in January advanced 13 per cent ahead of December, and equalled January a year ago. Export shipments in January were just slightly above December figures and passed January last year by 10 per cent.

Ourselves & Government

A Check List of Federal Action Corrected to Feb. 22

FEDERAL TRADE COMMISSION

F.O.B. PRICE CASE — Trial examiner's report next development expected in the Ford case. Testimony closed in GM case with trial examiner's report, commission's brief and respondent's reply brief all filed. Expected to follow final arguments will be FTC order. In both cases, FTC alleged misleading price advertising.

VS. GENERAL MOTORS—Trial examiner's report due. Rebuttal testimony concluded Sept. 11. Case involves FTC charge that GM dealers are required to handle GM parts exclusively.

FAIR TRADE PRACTICE RULES —Proposed FTC rules made public on Feb. 19. Hearing called for March 20. (See page 256.)

VS. AUTOMOTIVE TRADE ASSOCIATIONS—Counsel for the FTC and for the respondents are negotiating, a stipulation, which if agreed upon will result in the issuance of a cease and desist order or a dismissal. Involved are the National Standard Parts Association, the Motor and Equipment Wholesale Association, both national organizations, and three mid-western regional associations which were charged in October, 1936, in an FTC complaint with allegdly forming a combination to control the market and maintain resale prices.

C. Leo Wenzel

C. Leo Wenzel, general sales manager for the Budd Wheel Co., died Feb. 12 after a two month's illness, at the Mayo Hospital, Rochester, Minn. Mr. Wenzel was forty-two years old. He was widely known in the tire and truck industries and was past president of the Tire and Rim Association.

New Fiat Truck

Interior of driver's cab of Fiat 666 truck which is equipped with a six-cylinder 565-cu. in. Diesel engine developing 105 hp. at 2000 r.p.m. The truck has a net weight of 12,220 lb., and the load-carrying capacity is 14,000 lb. The transmission has seven forward speeds and two reverse, and the final drive is through double - reduction gears (straight bevel and helical spur).

FTC Plans to Undertake Distribution Cost Study

National Advertising May Be Due for Close Scrutiny In Inquiry Which Is to Start Sometime After June 30

While Congress was seeking to set itself up as being "economy minded" in recent weeks, the energetic Federal Trade Commission successfully angled for an $89,000 distribution cost study which will be launched sometime after June 30. Out of a total appropriation of $2,300,000 for next fiscal year, the independent office appropriation bill earmarked the $89,000 figure which, according to some authorities, may be used as a forerunner in an Administration attack aimed at national advertising.

Attention was focused on the advertising phases of the inquiry when this statement was made by an FTC official before the House Appropriations Committee:

"The place of advertising in distribution, especially national advertising, is a matter of great importance and general interest. Is it costing the consumer too much for the service it renders? Does it sometimes render the consumer a disservice? The proposed inquiry would seek to answer these and other similar questions."

Secret hearings before the committee also revealed that the FTC, as part of its study program for next fiscal year, plans to:

1. Collect periodic financial accounting reports from selected corporations (about 1000 companies in from 80 to 100 industries will be selected) for the purpose of providing reliable information "about operating conditions as a guide for business management." This phase of the FTC's work will cost $61,000 and is designed to satisfy President Roosevelt's request two years ago for "information concerning the organization, business, conduct, practices and management of corporations."

2. Seek the causes for mounting costs in distribution which are said to absorb benefits which "should go to

(*Turn to page* 241, *please*)

New Car Registrations and Estimated Dollar Volume by Retail Price Classes*

•	DECEMBER, 1939		TWELVE MONTHS, 1939			
	Units	Dollar Volume	Units	Per Cent of Total	Dollar Volume	Per Cent of Total
Chevrolet, Ford and Plymouth	126,979	$96,900,000	1,428,644	53.86	$1,056,600,000	46.54
Others under $1,000	83,950	76,300,000	940,053	35.44	858,500,000	37.82
$1,001 to $1,500	32,796	37,700,000	246,743	9.30	285,700,000	12.59
$1,501 to $2,000	1,828	3,200,000	24,569	.93	38,800,000	1.71
$2,001 to $3,000	946	2,300,000	11,953	.45	27,300,000	1.20
$3,001 and over	21	100,000	697	.02	3,100,000	.14
Total	246,520	$216,500,000	2,652,659	100.00	$2,270,000,000	100.00
Miscellaneous	24	....	718			
Total	246,544	$216,500,000	2,653,377		$2,270,000,000	

* All calculations are based on delivered price at factory of five-passenger, four-door sedan, in conjunction with actual new car registrations of each model. The total dollar volumes are then consolidated by price classes.

January Rim Inspections Increased 23% Over '39

The Tire & Rim Association reports that during January, 1940, it inspected and approved a total of 2,163,914 rims, an increase of approximately 26 per cent over the January, 1939, total.

Business in Brief

***Written by the Guaranty Trust Co., New York, Exclusively for* AUTOMOTIVE INDUSTRIES**

Uninterrupted recession in general business activity is indicated. The New York *Times* seasonally adjusted index for the week ended Feb. 10 stood at 98.6 per cent of the estimated normal, as compared with 101.5 for the preceding week and 89.6 a year ago. *The Journal of Commerce* unadjusted index, at 97.6 per cent of the 1927-29 average, was 3.8 points below the level a fortnight earlier.

Retail trade improved moderately in the two weeks ended Feb. 17, with sales totals ranging, according to Dun & Bradstreet estimates, from 5 to 10 per cent above the corresponding 1939 turnover. Department store sales during the week ended Feb. 10 were even with those of a year ago, according to the Federal Reserve compilation, breaking a long series of year-to-year gains.

Production of electricity by the light and power industry declined contra-seasonally in each week of the fortnight ended Feb. 10 but was 11.4 per cent above the comparable output last year.

Railway freight movement during the week ended Feb. 10 dropped substantially, reflecting in the greatest degree yet shown the current slowing down of industrial activity. Car loadings numbered 626,903, as compared with 657,004 the week before and 576,352 a year ago.

Bank debits to individual accounts in leading cities during the week ended Feb. 7 were one per cent above the total for the preceding week and five per cent above the comparable 1939 figure.

Average daily production of crude oil during the week ended Feb. 10 was 3,688,100 barrels, as compared with 3,498,800 barrels in the week before, and exceeded by 159,100 barrels the required output as computed by the Bureau of Mines.

Production of bituminous coal during the same period averaged 1,633,000 tons daily, as compared with 1,700,000 tons for the preceding week and 1,424,000 tons a year ago.

Business failures during the week ended Feb. 8 numbered 251, according to the Dun & Bradstreet report, as against 285 the week before and 318 a year ago.

Cotton-mill activity increased more than seasonally in the week ended Feb. 10. The New York *Times* adjusted index rose to 137.5 from 135.7 for the preceding week and 121.8 a year ago.

Engineering construction contracts awarded during the first seven weeks of this year fell 23 per cent below the corresponding 1939 total, although private contracts registered a gain of 35 per cent, according to *Engineering News-Record*. Contracts for all types of construction in 37 States during January, as reported by F. W. Dodge Corp., were 22 per cent below the total a year ago.

Professor Fisher's index of wholesale commodity prices for the week ended Feb. 17 stands at 84.3 per cent of the 1926 average, as compared with 84.7 a fortnight earlier and 86.3 for the first week of the year.

Excess reserves of the member banks of the Federal Reserve system rose $60,000,000 during the week ended Feb. 14 to an estimated total of $5,580,000,000, only $10,000,000 below the all-time peak reported for Jan. 24.

AUTOMOTIVE INDUSTRIES

Summary of Automotive Production Activity

BUSES The horizons in this field continue to brighten with one of the leading manufacturers reporting an increase in operating rate of about one per cent each week since the first of the year. This particular producer now operating at about 65 per cent of capacity.

TRUCKS Prospects for this year continue to be favorable and, in general, production schedules are heavier. A number of producers seem to feel that this condition will last indefinitely inasmuch as dealer orders show no signs of slackening.

TRACTORS Makers state that sales last year were about seven per cent less than in 1938 due to lower prices which farmers received for products and the change over to new tractor lines. However, present production schedules are strong and the first two months show gratifying increases.

AUTOMOBILES Preliminary estimates indicate that production totals for February will exceed 400,000 cars and trucks by several thousand units to put the month well ahead of the comparable period a year ago.

MARINE ENGINES A fairly large volume of orders has stepped up production. Larger units still predominate, although boat shows have produced increased sales of smaller units.

AIRCRAFT ENGINES Backlogs are piling up in spite of heavy production schedules. Development work is continuing.

This summary is based on confidential information of current actual production rates from leading producers in each field covered. Staff members in Detroit, Chicago, New York and Philadelphia collect the basic information, in all cases from official factory sources.

Wants Engineers for Labor Mediation Jobs

Because of their training and temperament, engineers are qualified to take over the exacting duties of mediators or arbitrators in solving disputes between labor and management, the annual meeting of the American Engineering Council in Washington, D. C., was told by Otto S. Beyer, who is of the National Mediation Board. The selection of such men is difficult, Mr. Beyer said, since they must have a working knowledge of conditions in the industry concerned, yet cannot be identified with labor or management. Mr. Beyer suggested that the engineering profession give active consideration to ways and means of making available, from its members, the names of "broad-minded, intelligent socially-conscious and technically well-informed" individuals willing to undertake such tasks.

Retail Automotive Sales Up 28% in '39

Making a gain of 28 per cent, retail sales of products in the automotive group, as classified by the Bureau of the Census, rose to a value of $4,990,000,000 in 1939 compared with $3,900,000,000 in 1938, according to *Domestic Commerce*, published by the Department of Commerce. In the group are included motor vehicles, accessories, tires, batteries and garage supplies. Retail sales at filling stations increased 1 per cent to $2,428,000,000 from $2,400,000,000.

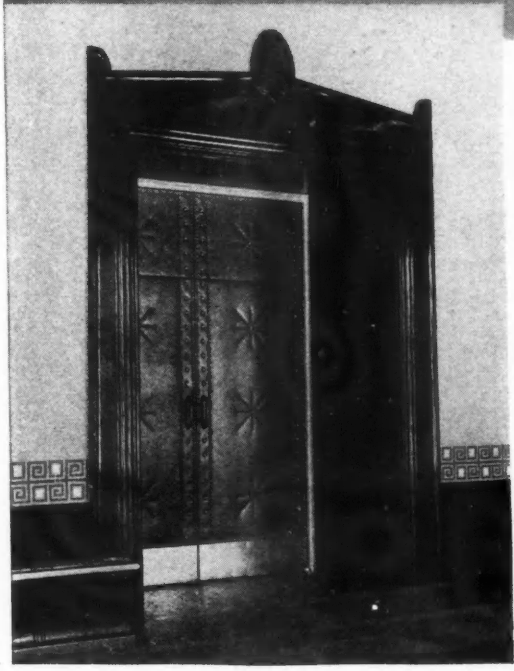
WPA Reports on Study Of Industrial Research

A WPA project report released recently shows that the number of persons engaged in industrial research—laboratories from which the bulk of new inventions and improved processes have come in recent years — has increased fourfold since 1929 with 50,000 employes at present and annual expenditures averaging between $150,000,000 and $200,000,000.

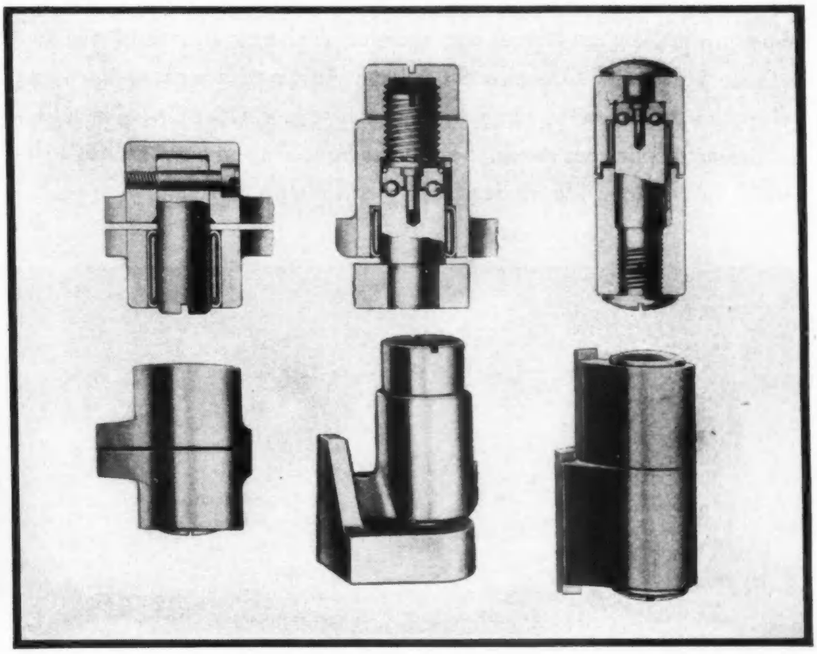
The report, an 81-page document with charts, tables and a statistical appendix, set forth that the greatest amount of research is being done in the relatively new, mass-production industries and mentions specifically the electric goods, rubber, petroleum, industrial chemicals and automobiles—all industries in which research activity, measured in terms of personnel employed, was said by the report to have grown most rapidly during the last two decades.

The report noted that, while the rapid growth of industrial research has been an important source of employment for an increasing number of specially trained persons, the rate of absorption by industry has not been as great as the rate at which they have been trained in schools.

RUSSWIN HINGES SWING FREELY ON TORRINGTON NEEDLE BEARINGS



Russwin Anti-friction Pivot Hinges are designed for just such jobs as carrying these heavy ornamental doors, weighing up to 1000 pounds each.



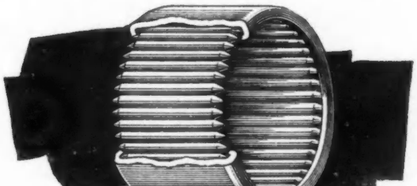
In these three types of pivot hinges, Russell & Erwin Manufacturing Co. combines Torrington Needle Bearings and ball bearings—the Needle Bearings to carry heavy radial loads in a limited space, the ball bearings to take the thrust. Note the compact designs obtained.

MINIMUM *friction* was the first requirement in the design of Russell & Erwin Manufacturing Company's Adjustable Ball Bearing Pivot Hinges. Because hinges involve both radial and thrust loads, the design utilizes both ball thrust and Torrington Needle Bearings—an interesting example of the adaptability of the Needle Bearing for use with other types of bearings.

"Torrington Needle Bearings were selected for the radial loads," say Russell & Erwin engineers, "because of their compactness, ease of assembly, lubricant retaining qualities, and their comparatively low cost. With them we were able to keep the knuckle diameters to an absolute minimum and to provide a truly anti-friction bearing capable of handling the heavy oscillating loads at very slow speeds, which the hinges are called upon to carry.

"We feel that Torrington Needle Bearings have assisted us materially in making a most distinct advance in pivot hinge design."

You can build better value into your own product by incorporating the



Torrington Needle Bearing—the bearing that gives anti-friction construction in small space at low cost, and needs little attention in service. The Torrington Engineering Department will be glad to cooperate with you in laying out applications for the Needle Bearing in your product. If you would like additional information on this unusual bearing, write for Catalog No. 7. For Needle Bearings to be used in heavier service, request Booklet 103X from our associate, the Bantam Bearings Corporation, South Bend, Indiana.

The Torrington Company
ESTABLISHED 1866
Torrington, Conn., U.S.A.

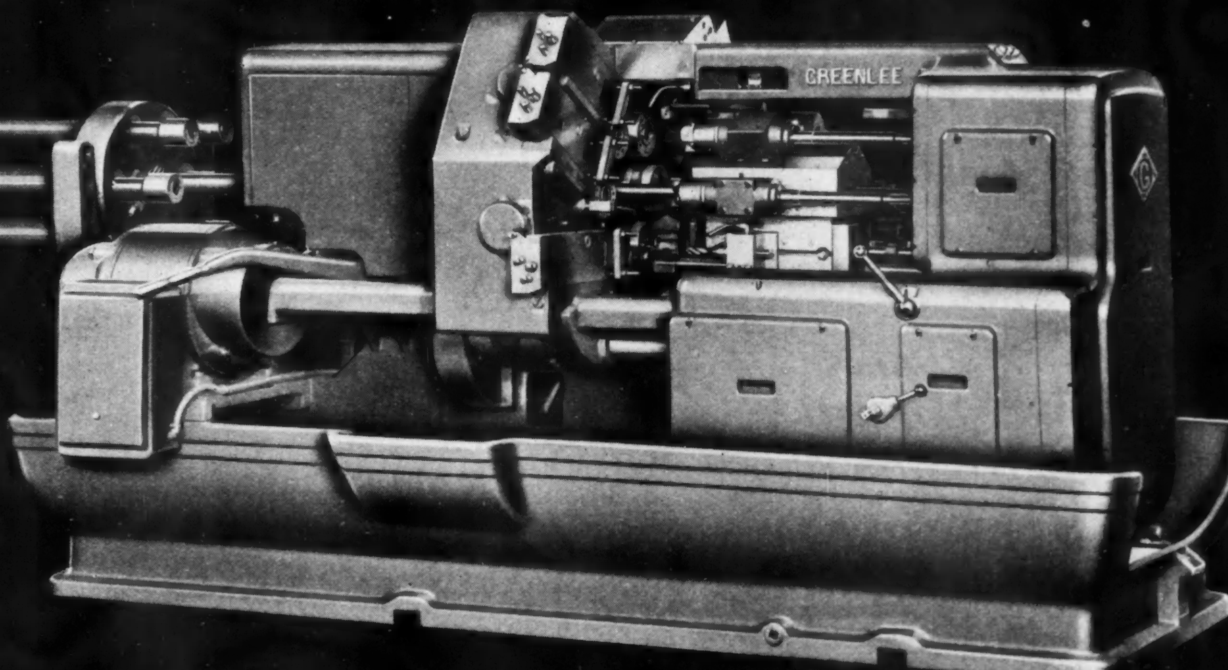
Makers of Ball and Needle Bearings

New York Boston Philadelphia Detroit
Cleveland Chicago London, England

TORRINGTON NEEDLE BEARING

6-SPINDLE AUTOMATIC

You Get FAST PRODUCTION CONTINUOUS ACCURACY ★ QUICK SET-UP ★ ACCESSIBILITY ★ ★ EASE OF CONTROL



• When you install a Greenlee "Six", you get the latest in six-spindle screw machine design, because it not only incorporates the basic principles of the "Four", but includes others of especial value in six-spindle performance. You get six independent cross slides actuated by interchangeable plate cams; a main tool slide operated by intermittent gearing, not cams; collets that can be removed without indexing the head; and you get many other features, such as built-in set-up lighting and wide-open accessibility. All these features make for easier operation, quicker change-over and higher production. And they all help win the battle for lower manufacturing costs.

★ Let us send descriptive matter on Greenlee Four and Six-Spindle Screw Machines. And if you have a work piece up for consideration, let us have full information concerning it. A production estimate will be furnished promptly. No obligation, of course.

GREENLEE BROS. & CO., ROCKFORD, ILLINOIS, U. S. A.

Acme

"Young Tom"

Henry and Edsel Ford gave a cordial welcome to movie star Mickey Rooney when he visited Detroit recently. The irrepressible Mickey appears in "Young Tom Edison," the Hollywood version of the boyhood of the late Thomas E. Edison.

MEN . . . . . .

Six promotions in the engineering staff of Pontiac Motor Division have been announced. **William H. Manning** moves from the post of assistant chief engineer in charge of experimental work to assistant chief engineer in charge of design. **George A. Delaney**, former electrical engineer, now heads the experimental laboratories. **L. Raymond Sampson,** head of the technical data section, has been shifted to the electrical engineer post. **William J. deBeaubien** of the drafting department has been appointed engineer in charge of accessories. In recognition of the growing use of rubber in engine design, **George W. Lampman,** designer, has been placed on special assignment in charge of all rubber developments. **Forrest H. Kane,** assistant to the chief engineer, has been elevated to executive engineer and will continue to specialize in cost analysis, budget and sales contact.

H. R. MacMillan, prominent Canadian industrialist of Vancouver, B. C., was elected a director of The International Nickel Co. of Canada, Ltd., at the February monthly meeting of the board. He fills the vacancy caused by the death of James A. Richardson, of Winnipeg, Manitoba.

General Tire and Rubber Co. directors have named the following company officers for the coming year: **W. O'Neil,** president and general manager; **W. E. Fouse,** vice-president; **C. J. Jahant,** vice-president and factory manager; **T. S. Shore,** vice-president and treasurer; **L. A. McQueen,** vice-president, in charge of sales; **S. S. Poor,** vice-president, in charge of retail merchandising; **H. R. Jenkins,** secretary; **T. S. Clark,** assistant treasurer; **F. W. Knowlton,** assistant secretary. This increases the list of vice-presidents of the company from two to five, by the promotion of Mr. Shore, Mr. McQueen and Mr. Poor to vice-presidencies. Mr. Jenkins was promoted from assistant secretary to secretary, and Mr. Knowlton is the newly appointed assistant secretary.

The Timken-Detroit Axle Co. has announced the appointment of **R. L. "Bob" Koeppen** as West Coast field representative. Mr. Koeppen will make his headquarters in San Francisco, Calif.

J. M. Cosgrove has been made director of the development laboratory of the Standard Steel Spring Co., Coraopolis, Pa.

Appointment of **Ira B. Groves,** manager of the St. Louis branch, as manager of the Ford Motor Co. assembly

branch at Kansas City, and promotion of **J. C. Doyle** to be manager of the St. Louis branch has been announced. Mr. Groves succeeds W. L. Yule, who lost his life recently in an automobile accident near Carthage, Mo. Mr. Doyle was assistant manager of the St. Louis branch.

H. H. Yeager has been appointed assistant sales manager of the Shafer Bearing Corp., Chicago, manufacturers of Shafer radial-thrust roller bearings. Mr. Yeager was for a number of years district sales manager of the Dodge Mfg. Corp., and prior to that was manager of the mill supply department of SKF Industries, Inc.

C. Lawrence Muench has been elected president of the Hood Rubber Co., Watertown, Mass., moving up from executive vice-presidency to succeed **Arthur B. Newhall.** Mr. Muench became vice-president and sales manager in 1933 and had been executive vice-president since May, 1939.

Diamond T Motor Car Co. has announced the appointment of **William G. Norris** as national sales manager of the Diamond T Pag-Age-Car Division.

The Timken Roller Bearing Co. has appointed **M. H. Kuhl** assistant manager of the Industrial Division. This position was formerly held by **S. D. Partridge,** who was recently made manager of the Industrial Division. **P. J. Reeves** has been transferred to the home office to engage in special sales work. Mr. Reeves' former position as manager of the Los Angeles office is being filled by **S. T. Salvage,** promoted from the company's sales-engineering ranks.

Richard R. Powell has been appointed special representative of the sales department of Studebaker.

E. A. Longenacker, Milwaukee industrial engineer, has been elected executive president of the Lauson Co., New Holstein, Wis., outboard motor and gasoline engine manufacturers. Other officers named at the annual meeting in January were Henry S. Wright, Milwaukee, president and general manager; H. F. Edson, New Holstein, vice-president and sales manager; Eugene Wulff, New Holstein, vice-president; Harold E. Bruns, New Holstein, secretary-treasurer. Directors include Roland Wheeler, A. S. Puelicjer, W. Thurman Reiley and Stanley Evans, Milwaukee, and Robert Rolfs, West Bend.

Walter F. Rockwell, vice-president of the Wisconsin Axel Corp., Oshkosh, Wis., subsidiary of the Timken-Detroit Co., Detroit, was named Oshkosh's "man-of-the-year" by the Oshkosh Junior Chamber of Commerce, which credited him with having done most to assure the city's future industrial security and progress. Mr. Rockwell is at present associated with the Detroit headquarters, in charge of the company's plants in Detroit, Oshkosh, Milwaukee and Waukegan.

Arthur A. Maynard, has been appointed director of engineering of General Motors of Canada, Ltd., Oshawa, Ont.

Casing Shipments During 1939 Totaled 56,975,044

Automotive pneumatic casing shipments during 1939 amounted to 56,975,044 units. This is 32.1 per cent above shipments during 1938 and represents the best year since 1929 when over 69,000,000 units were shipped according to statistics released by the Rubber Manufacturers Association, Inc.

Replacement units shipped in 1939 are estimated at 37,536,608, an increase of 22.8 per cent above 1938 and were the highest since 1931. Original equipment shipments, in 1939, estimated at 18,164,441 units, gained 57.7 per cent over 1938.

Total shipments for December are estimated at 4,740,112 units, an increase of 11.7 per cent over November, and 10.7 per cent above December a year ago.

International Harvester Announces New Tractors

Three new models of Diesel-powered, crawler-type tractors have been announced by the International Harvester Co. The new units are being built at the company's tractor works in Chicago. Diesel engines, gears and several other parts, will be made at Milwaukee Works, in Milwaukee, Wis. Sizes range from the smallest unit, weighing 6800 lb. and providing 30 hp. at the drawbar, to the largest, weighing 22,000 lb. and providing more than 70 hp. at the drawbar.

The two smallest units—the TD-6 and TD-9—have five forward and one reverse speeds, and the two largest—the TD-14 and TD-18—have six forward and two reverse speeds. All four models travel 1.5 m.p.h. in first speed. Top speed for the two smaller models is about 5.3 m.p.h., while top speed for the two largest models is about 5.8 m.p.h. All of the new models are powered with 4-cylinder, 4-cycle Diesel engines except the largest tractor, which has a 6-cylinder, 4-cycle Diesel engine.

Bore of the cylinders ranges from 3⅞ in. in the smallest model, to 4¾ in. in the largest unit. The stroke ranges from 5¼ in. in the smallest tractor, to 6½ in. in the largest. Piston displacement is 247.7 cu. in. for the smallest model and 691.1 cu. in. for the largest model.

Among the features of the new International Diesel crawlers are replaceable cylinder sleeves, crankshafts hardened by the electrical induction method, aluminum alloy pistons, full pressure lubrication system providing lubrication for all operating parts, multiple disc steering clutches, balanced weight of the tractor on tracks, variable speed governor and an operator's seat designed to give the operator comfort and easy visibility of all important parts of the tractor.

These are equipped with the standard International Diesel starting system, which converts the Diesel into a gasoline engine for starting, and after a quick cylinder warm-up switches to regular Diesel operation. The TD-18 is equipped with an electric starting system. Electric starting is also available on the other models.

The crankshaft of the TD-18 is mounted on seven main bearings and the three other new tractors have shafts mounted on five main bearings. All gears and bearings are protected by sealed inclosures and operate in a bath of oil.

Laminated Shim Co. Building New Plant

The Laminated Shim Co., Inc., Long Island City, N. Y., manufacturer of Laminum shims, shim stock and small stampings, has announced that work has started on a new plant located at Stamford, Conn. The new building is to be a modern, one-story manufacturing building of about 30,000 sq. ft. of floor space. Provision is being made in the structure for new general offices. It is expected that the plant will be completed early in June of this year.

40 YEARS AGO

The Autocar Co., who are this week moving from Pitsburgh, Pa., to their new factory at Ardmore, Pa., have completed their 1900 model. The carriage weighs 635 lb. with water and gasoline for a 75 mile run, and seats two persons comfortably. The motor, of the Otto cycle type, has two cylinders, with cranks set at 180 deg. and develops 4⅛ hp. by actual brake test.

Power is transmitted to the rear axle by means of a countershaft consisting of a speed drum, to which band brakes are applied, so that any speed, including a hill-climbing speed, may be obtained. The vehicle is entirely automatic, both as to fuel supply and lubrication, and is controlled by a single lever.

The frame is composed of steel tubes, with brazed joints. The front axle is

flexible to compensate for the inequalities of the road. Wire wheels, with flared rims and 2½-in. pneumatics, are employed. A condenser cooling the water from the cylinders is placed under the footboard.

An innovation adopted by the Autocar Co. is to take an indicator card from every engine and to give it to the purchaser as a guarantee of the horsepower of the motor.

From *The Horseless Age*, March, 1900.

Crude Rubber Consumption In January 13.5% Over '39

According to statistics released by The Rubber Manufacturers Association, Inc., it is estimated that rubber manufacturers in the U. S. A. consumed 54,978 long tons of crude rubber during the month of January. This represents a 13.5 per cent increase over December, 1939, and a 18.9 per cent increase over January, 1939, when 46,234 long tons were consumed.

Gross imports for January, as reported by the Department of Commerce, were 72,496 long tons, representing a 1.5 per cent increase over imports for December, 1939, of 71,395 long tons (revised) and a 85.5 per cent increase over the imports for January, 1939, which amounted to 39,082 long tons.

Total domestic stocks were estimated by the Association at the end of January to be 156,830 long tons, which is an increase of 11.8 per cent over the stocks on hand at the end of December, 1939, amounting to 140,280 long tons. The stocks, however, were lower than the quantity on hand at the end of January, 1939, by 29.9 per cent.

Crude rubber afloat to United States ports on Jan. 31, was estimated to have been 90,285 long tons, which is slightly lower than the 91,095 long tons reported afloat as of the end of December, 1939.

Reclaimed rubber consumption for January was estimated at 17,596 long tons, production at 20,447 long tons, and stocks on hand Jan. 31, 1940, at 25,530 long tons.

Hydraulic Press Mfg. Co. Changes New York Office

The Hydraulic Press Mfg. Co., Mount Gilead, Ohio, has moved its New York office. The new address is 233 Broadway.

U. S. Testing Co. and E. E. Free Laboratories Merge

The United States Testing Co., Inc., has announced the merger of the personnel and facilities of the E. E. Free Laboratories with the testing company.

The complete equipment, staff and associates of the E. E. Free Laboratories will be maintained at their present location—175 Fifth Avenue, corner of Twenty-third St., New York. E. A. Graham, formerly associated with Dr. E. E. Free, will manage the laboratories which will be known as the Engineering and Research Division of the testing company.

AC Spark Plug Expands Plant

Immediate construction of a large new spark plug plant in Flint, Mich., by the AC Spark Plug division of General Motors has been announced. The new plant will comprise 156,000 sq. ft. of floor space.

Yellow Truck Reports Net Profit for 1939

Net sales of Yellow Truck & Coach Mfg. Co. for the year ended Dec. 31, 1939, were $58,862,137. The preliminary consolidated net profit, subject to final audit, for the year ended Dec. 31, 1939, amounted to $3,276,474, after deducting provision for depreciation of $913,470 for plants and equipment and provision for Federal income taxes of $649,847. This compares with net sales of $43,334,283 and a net profit of $514,983 for the year ended Dec. 31, 1938.

Pick-Up in Steel Market Awaits Automotive Buying

Mill Operating Rate of About 65% Up to End of June Predicted by Ernest T. Weir

As happens at regular intervals in the steel market, a pick-up in activity waits on a revival of buying by automobile manufacturers. Some of the steel sellers find comfort in the slowing down of the decline, but the volume of fresh orders continues inadequate for the support of the current operating rate, and little change is looked for until the rate of automobile production and with it the need of steel move into higher ground.

Steel of all descriptions can now be obtained on short notice, and fill-in orders, coming from both automobile manufacturers and parts-makers, clearly indicate reluctance to anticipate requirements more than absolutely necessary. An interesting development is that disclosed by the American Iron & Steel Institute's 1939 statistics, which show that sheet capacity is now 11,374,065, an increase of 869,712 tons over that of 1938. Sheet production last year was 7,799,577 tons, so that a considerable expansion in demand could be met without overtaxing rolling and finishing capacity. What little in the way of difficulties buyers experienced during the November rush, resulted from minor delays in the provisioning of the continuous rolling mills with primary forms of steel. It is noteworthy that the only addition to capacity was in sheets, the preponderant consumption of which is of automotive character. Only minor changes in steel bar capacity have been noted in the last few years.

A steel mill operating rate of between 60 and 70 per cent of ingot capacity between now and the end of June was forecast recently by Ernest T. Weir, president of the American Iron & Steel Institute. Mr. Weir looked for more favorable weather and a pick-up in export demand to bring some improvement in March. Mr. Weir said that he did not look for any price-cutting when orders begin to come in and that steel was being sold at present at "list prices."

Leading mine producers raised the price of copper $5 a ton to 11½ cents a pound during the week ended Feb. 24. One of the large marketers had for some time quoted that figure, refusing to meet the price of the others when they announced a reduction from 11½ to 11¼ cents. The advance came just ten days after the placing of an order for 25,000 tons by France. It is said that the policy of that country and that of her British allies now is to make the heaviest possible purchases of strategic metals, so as to leave no supplies for neutrals who might re-export to Germany or Russia. Copper and brass products prices were immediately revised upward to the extent of the advance in the basic metal. Domestic demand has improved of late and stocks of refined metal have been sharply reduced.

The advance in the copper market caused tin prices to firm. Sellers again asked 46 cents for spot Straits, following several days of lower prices. There is much talk of tightening trading in tin, so as to eliminate continuing seeping of supplies through Russia and neutral countries to Germany. The large automotive interests, which usually buy in 25-ton lots, have not shown much interest in the market lately.—W. C. H.

Goodyear's 1939 Net Profits at $9,838,797

The Goodyear Tire & Rubber Co.'s annual report shows a total income for 1939 of $216,496,842. Net profits on Goodyear's 1939 operations are reported

at $9,838,797, out of which five dollars were paid on each of 649,632 shares of outstanding preferred stock and one dollar was paid on each of 2,059,168 shares of outstanding common stock.

Curtiss Tests Military Plane

Equipped with the most powerful engine ever installed in a pursuit plane, a new military airplane designated Hawk 75 A-4 has been announced in Buffalo by the Curtiss Aeroplane Division of Curtiss-Wright Corp.

With structural design features similar to those of its predecessors in the Curtiss Hawk series, the new plane is built to be powered with the recently developed Wright Cyclone 1200-hp. engine. Other Hawk pursuits have approximately 1000-hp. The Hawk 75 A-4 now is undergoing tests at Buffalo Airport.

It was pointed out that the new engine, with the largest horsepower of any single-row radial engine, will materially increase the speed and other military-performance characteristics of the plane. Officials declined to say to whom the new ship would be offered for sale.

PUBLICATIONS

Many new listings and new prices for **Bunting standardized bearings** are included in general catalog No. 40 issued by the Bunting Brass & Bronze Co.*

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has published a 32-page, two-color catalog which describes its model HD14 **Diesel crawler tractor.***

Modern **air-control instruments and their applications** are discussed in a new catalog No. 4050 issued by the Bristol Co., Waterbury, Conn.*

"Light for Work" is the title of a new booklet prepared by the Acme Electric & Mfg. Co., Cuba, N. Y. In addition to describing Acme mercury vapor transformers for indoor and outdoor applications, the booklet explains the characteristics of mercury vapor lighting, the various types of lighting systems for a specific and general applications.*

The James F. Lincoln Arc Welding Foundation has prepared an illustrated brochure in which its **$200,000 Industrial Progress Award Program** is completely described.*

Seventy-eight **Diesel-powered machines** that have operated a total of more than 1,000,000 hours to date, are illustrated and described in a 32-page booklet, designated as form 5856, prepared by the Caterpillar Tractor Co., Peoria, Ill.*

The Lumber Mutual Casualty Insurance Co., New York, has prepared a manual which deals with the correct barricading of road excavating and paving jobs. It is titled, "You Must Protect The Careless Driver."*

Results of a nationwide survey of traffic engineering departments in major cities of the United States are presented in a 63-page booklet published by the **Institute of Traffic Engineers** with the cooperation of the National Conservation Bureau, accident prevention division of the Association of Casualty and Surety Executives. The booklet is titled "Organization and Functions of City Traffic Engineering Departments" and was edited by Dr. Bruce D. Greenshields. Price, 50 cents.

"Link-Belt Conveyors in American Industry," a booklet containing statistical data and rations dealing with different applications of **mechanical elevating and conveying equipment,** has been published by the Link-Belt Co., Chicago.*

"The Fabrication of U. S. S. Stainless Steels" is the title of a 92-page book bound in stiff covers, just issued by United States Steel Corp. Subsidiaries. The book is divided into three comprehensive sections: part one is devoted to welding, riveting, soldering and joint design; part two is concerned with machining, cutting, forming, annealing and pickling operations; and, part three deals with surface finishing and protection. Austenitic, ferritic and martensitic stainless steels are treated separately. Laboratory corrosion data covering a wide range of chemicals and acids are presented for four types of U. S. S. Stainless Steels. Price of the book is $1.

A practical guide for the care and use of **carbide-tipped tools** is contained in a 32-page catalog which has been issued by the McKenna Metals Co., Latrobe, Pa. Known as Catalog No. 3, it contains complete descriptions, drawings and recommended uses for standard Kennametal tools and blanks for turning, boring and facing steel and other metals.*

The Ford Motor Co. has prepared a pamphlet entitled **"The Ford Way of Doing Business."***

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*Obtainable through editorial department, AUTOMOTIVE INDUSTRIES. Address Chestnut and 56th Sts., Philadelphia. Please give date of issue in which literature was listed.

Chrysler Workers Awarded $3,000,000 Compensation

Michigan Unemployment Compensation Commission's Decision Favors 27,000 Employes; Appeal Expected

Award of approximately $3,000,000 in unemployment compensation benefits to 27,000 of the 50,000 workers in Chrysler plants who were affected by the labor dispute which tied up operations of the corporation from Oct. 6 to Nov. 29 last year marked the latest phase in developments which will determine whether state unemployment benefits will be paid to workers affiliated with unions engaged in strikes or other work stoppages.

The award decision was announced on Feb. 21 by Charles Rubinoff, referee for the Michigan Unemployment Compensation Commission, after a review of month-long testimony and briefs filed by all parties interested in the dispute, including the UAW-CIO, UAW-AFL, Chrysler Corp., and the Unemployment Compensation Commission. His ruling reversed a previous decision of the Michigan Unemployment Compensation which held that all of the 50,000 claimants were ineligible under the Michigan Compensation law which eliminates those "directly interested" in work stoppages resulting from labor disputes.

The referee's ruling drew a distinction between workers in three Chrysler plants, the Dodge main, forge and truck plants, in which there were labor disputes, and workers in seven other Chrysler plants in which work was halted because of a shortage of materials even though a majority of employes in these plants were members of the UAW-CIO which used the dispute as a vehicle for obtaining a new contract with the corporation.

It was expected that one or more parties interested in the decision would appeal the referee's ruling to the appeal board established by the Michigan Unemployment Compensation law which allows 15 days for the filing of appeals. Decisions of the appeal board may be carried to the courts so that it is possible that the actual payment of compensation may be subject to continued adjudication.

The earlier decision of the Compensation Commission treated all plants in the corporation as one establishment while the referee considered each of the 10 plants as separate establishments. In refusing compensation to 23,000 workers in the three plants directly engaged in the dispute, however, the referee ruled that they had effected an illegal slowdown—an act which the UAW-CIO had denied throughout the period of the dispute.

Observers of the labor situation pointed out that if the referee's decision is allowed to stand it would in effect amount to state financing of strike benefits to members of a union who could tie up production in a key plant with assurance that all members except those directly involved in the dispute could collect benefits from the state even though the entire membership was directly interested in the outcome of an eventual settlement.

(*Turn to page* 264, *please*)

Despatch Oven Co. Officers Re-Elected

A. E. Grapp was re-elected president and treasurer for 1940 of the Despatch Oven Co., Minneapolis, Minn., at the stockholders annual meeting held recently. Other officers re-elected include H. L. Grapp, vice-president and general manager; G. C. Keyes, vice-president and chief engineer, and F. H. Faber, secretary and sales manager.


OFFICIAL PHOTO,
S. ARMY AIR CORPS

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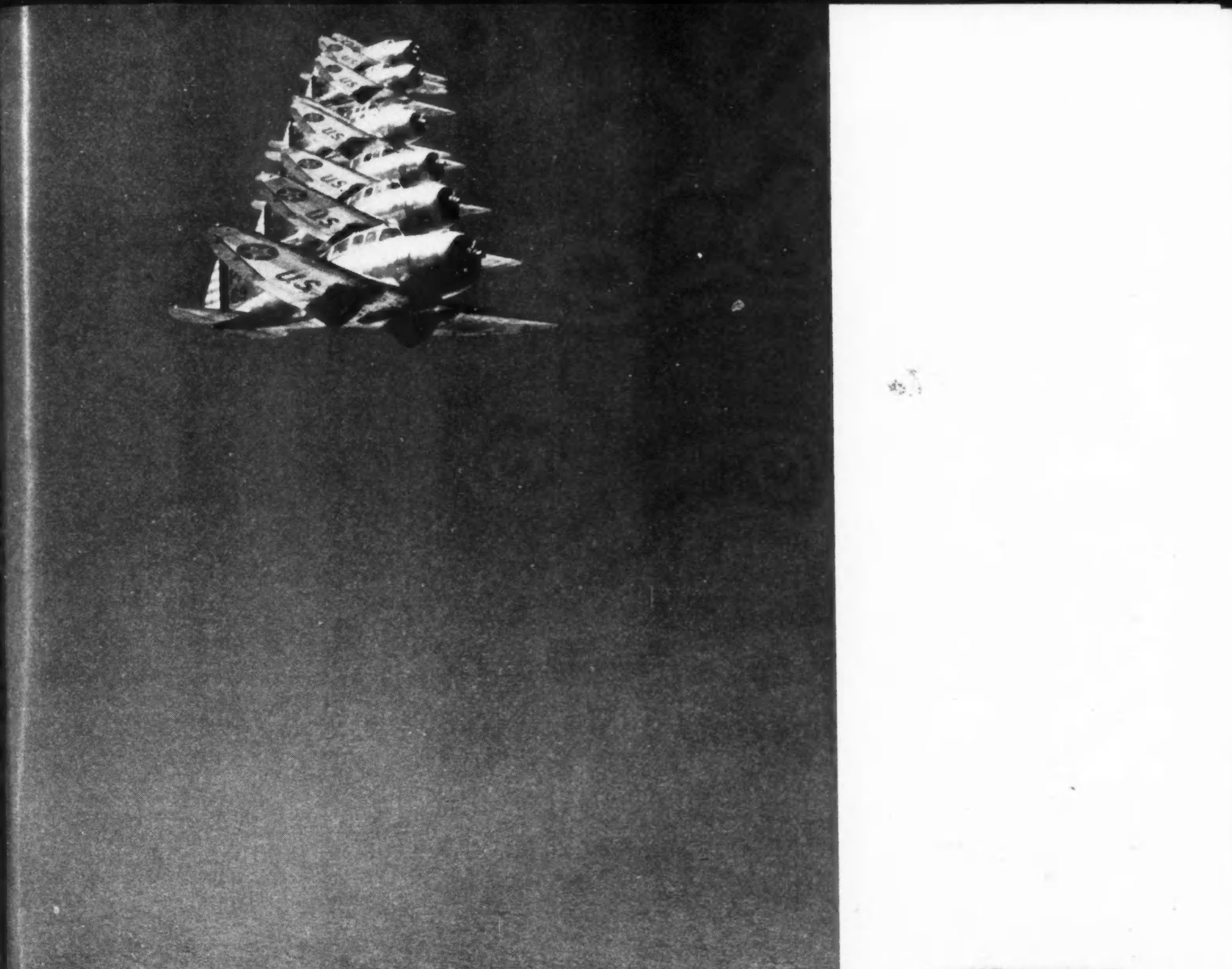
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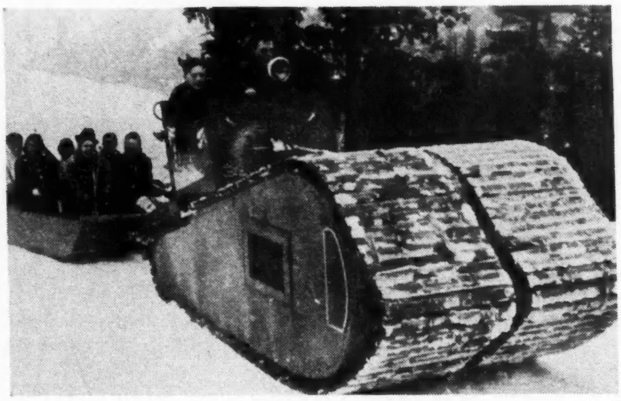
U.S. ARMY AIR CORPS



Acme

For Battle

—but for battling the elements only is this "Snowtrak" constructed by T. H. Brunius for hauling sports enthusiasts at Echo Lake, Calif. Powered with a gasoline engine, the machine travels 20 m.p.h. hauling 20 passengers. Track cleats are of wood with steel on the traction side.

CENSORED

An exclusive feature prepared by the London correspondent of* Automotive Industries, *M. W. Bourdon.

Road deaths in Great Britain in December reached the highest total for any month since records were kept. The majority occurred during the nightly black-out. As a result, a speed limit of 20 m.p.h. after dark has been imposed in so-called built-up areas, where hitherto the legal limit has been 30 m.p.h.

The number of road deaths in December was 1155, an increase of 212 over December 1938. It brings the total for the first four months of the war to 4130, as against 2491 during the corresponding months of 1938.

* * *

In their abbreviated war-time form the official returns of British exports do not differentiate between automobiles and certain other engineering products. The Society of Motor Manufacturers has issued a statement to the effect that exports of motor vehicles of all kinds during November last showed an increase of 26 per cent over November, 1938, and that during the first three months of the war the exports to Australia, India, Burma, Portugal and Uruguay constituted a record in each case.

* * *

A Bill is in progress through Parliament to give effect to a promise of the Minister of Transport that no increase of taxation or reduction of legal speed should result from the use of a gas fuel on trucks or buses owing to the maximum weight in any classification being exceeded by the provision of pressure cylinders for coal gas or gas producer plant. Draft regulations under this Bill permit weight increases of from 1120 lb. to 1680 lb. and allow vehicles exceeding 26 ft. in length to draw a trailer for a producer plant and to run at the speed ordinarily permissible if no trailer is attached. A further concession permits the overall height of a single-deck bus to be increased from 10 ft. 6 in. to 15 ft. to enable it to carry a flexible type of container for coal gas at mains pressure.

* * *

The rationing of gasoline and fuel oil has revived a demand for coal-fired steam trucks. Advertisements offering to buy old steamers in any condition have been appearing in truck operators' journals. Among the responses have been some that set values nearly as high as the original price of the vehicles when new.

Ethyl Opens a Seattle Office

The Ethyl Gasoline Corp. has opened a Seattle office, establishing a separate division for the Northwest comprising the states of Washington, Oregon, Idaho, Utah, Montana, and Wyoming. Harry Kuhe, formerly assistant division manager of the Tulsa division, has been appointed manager of the new Seattle division. Fred Naylor, formerly of the Chicago division, has been appointed assistant division manager.

G.E. Opens Plastics Unit at Fort Wayne

The first of two new sales units of the General Electric plastics department was opened Feb. 12, at the Fort Wayne, Ind., plant, with Robert L. Davis of the New York office in charge.

Odis A. Porter

Odis A. Porter, 70, official timer of the 500-mile events at the Indianapolis Speedway, died Feb. 17, after a long illness. Gaylord H. (Snappy) Ford, Porter's understudy for four years, when Porter's health began to fail, succeeds him as Speedway official timer.

FTC

(Continued from page 226)

the consumer, resulting from discoveries and improvements developed in research laboratories."

3. Study the influence of Federal and state legislation on distribution through laws on selling below cost, resale price maintenance, price discrimination, commercial bribery, unfair trade practice, price fixing, price filling and interstate trade barriers.

The FTC, which last session was given funds to start an investigation into the effects of resale price maintenance since the anti-trust laws were relaxed in 1937 to permit the practice under the Miller-Tydings resale price maintenance law, sought to allay fears that an extensive investigation of national advertising was a part of its $89,000 distribution study by issuing this statement.

"There is no purpose or intention of singling out advertising any more than any other item of the cost of distribution and no more emphasis will be placed on advertising costs in this inquiry than was done in such inquiries as agricultural income, farm implements and motor vehicles. The purpose of the inquiry is to ascertain and assemble pertinent facts concerning the whole subject of distribution in a number of industries."

Despite this statement, reports persisted that the FTC's study will not be quite the innocuous investigation which the Commission likes to represent it as being. In this connection, it is recalled that Assistant Atorney General Thurman Arnold, head of the Justice Department's anti-trust division, created a stir in advertising circles in November, 1938, when he raised the point that extensive advertising results in "either a wasteful system of distribution on the one hand or a monopoly on the other." The Arnold suggestion that advertising should be restricted to what he called "its proper field" was made when the Justice Department announced in 1938 that the Ford Motor Co., and the Chrysler Corp. had entered into consent decrees with the government, agreeing to discontinue pushing a particular finance company in distributing their products.

"Monopoly," Mr. Arnold said at that time, "is fostered when advertising is used to put competitors at a disadvantage for the sole reason that they do not have resources sufficient to expend equally large sums in advertising particular products or the services of particular companies."

Aside from the complaint that "it is just one more way to spend a little money and to pry into a situation about which no great question has been raised," little opposition was heard in the Senate when the FTC's $89,000 cost distribution study was up for consideration. There was an unsuccessful attempt to eliminate the $89,000 item but administration lieutenants came to the aid of the FTC, which has a way with Congress, and the $2,300,000 appropriation went through intact.

"Old Timers" to Form National Organization

A committee representing 130 automobile old timers which sponsored a luncheon and reunion at the Hotel Lexington in New York City during automobile show week last October, has announced that the group will organize and incorporate under the membership corporation law of the State of New York. Elmer Thompson, secretary of the Automobile Club of America, has been appointed a committee of one to proceed with the details with full power to act on behalf of the committee.

Members of the board of directors will be selected from various sections of the country, as well as from the roster of officers of the new organization, all of whom will serve until the first annual meeting to be held in New York City, during the week of the automobile show in October. Those so designated will be named in the certificate of incorporation to be filed at Albany. It is expected that a national advisory committee, composed of the directors and members from different geographical centers will be created.

It is planned to build up a membership adequate to carry on a national organization of the automobile old timers, countrywide in scope and to whom a membership card will be issued certifying as to the year of the holder's first association with automobiling.

Among some of the activities suggested, is the issuing of a quarterly bulletin; listing the names and addresses of members; news items concerning them; the activities of local groups, and a schedule of meetings contemplated to be held in New York City and elsewhere.

One of the principal aims of the new organization will be to collect historical data of the early motoring days from members and other sources, and to issue citations to members who have contributed in some accredited or important way to the development of the automobile. It has also been suggested that various automobile parts and accessories might be secured and eventually find a place in some museum. The first Klaxon horn has been contributed by its inventor Dr. Miller Reese Hutchison.

Qualification for membership requires that the individual has been associated in the motor vehicle sphere for at least twenty-five years, prior to the date of the application for membership. The annual dues have been fixed at $5.00 by the organizing committee.

The organizing committee is maintaining headquarters at the Hotel Lexington in New York City, where the meetings and conferences are being held in connection with the plans for perfecting the national organization of old timers.

ADVERTISING

F. A. Berend, for six years advertising manager of Pontiac Motor Division, resigned his position, effective March 1, to take charge of the new West Coast offices being opened by MacManus, John & Adams, Inc. in Los Angeles. W. J. Mougey, for several years manager of Pontiac's Chicago zone, will succeed Berend as advertising manager.

W. A. P. John, president of MacManus, John & Adams, Inc., Detroit advertising agency, has announced the advancement of R. A. Brewer to the position of a vice-president of the company. Brewer is account executive for the Dow Chemical Company at Midland, Mich. and Reichhold Chemicals, Inc.

Arnold E. ("Tubby") Schwarz has left Bryant Heater Co. of Cleveland to become associated as Promotion Director with Belnap and Thompson, Inc., Chicago sales promotion agency.

Charles C. Tapscott, advertising manager of the McQuay-Norris Mfg. Co., has been elected Director of the American Highway Sign Association.

A one day Regional Conference for Industrial Advertisers will be held in

Chicago, April 19, 1940, under the sponsorship of the Indianapolis, St. Louis, Milwaukee and Chicago Chapters of the National Industrial Advertisers Association, Inc.

"Calling All Cars" is a new radio program sponsored by Ford dealers in north-central states, produced by Ray Linton, Chicago, through McCann-Erickson, Inc.

Large, human interest photographs, dramatizing unusual uses of truck tires takes the place of comedy copy in the new Goodrich Silvertown advertising. Griswold-Eshleman Co., Cleveland, is the agency.

Ned Evans of the U. S. Rubber Co. has been appointed advertising manager of the new Fisk division of the company, succeeding Henry Hurd.

N. F. "Shad" Lawler, formerly with Bendix Corp., South Bend, has joined the Detroit office of McCann-Erickson, Inc., as account executive.

Through Howard Meermans, Inc., Cleveland Tractor Co., Cleveland is expanding its tractor advertising for 1940.

Willys-Overland Motors, Inc., Toledo, has appointed Harry A. Berk, New York, as merchandising counsel.

Piper Aircraft Corp., Lockhaven, Pa., plans an advertising campaign for its $995 airplane. Hutchins Advertising Co., Inc., Rochester, is the agency.

Firth Sterling Steel Co., McKeesport, Pa., has appointed Smith, Hoffman & Smith, Pittsburgh, its agency. Trade papers and direct mail will be used.

United States Rubber Co. has disbanded posters for other media in their 1940 campaign, according to W. L. Wardell, assistant general sales manager of the general products division. Campbell-Ewald Co., New York, is the agency.

Sterling Cable Co., Port Huron, Mich., is introducing its Steelductor, a new stainless steel automotive ignition cable. Sidener & VanRipper, Indianapolis, is the agency.

William D. Haylon has been promoted to advertising manager of the plastics division of General Electric Co., Pittsfield, Mass., succeeding Nat S. Stoddard.

John Benson, president, American Association of Advertising Agencies, received the gold medal for "distinguished services to advertising" at the annual awards dinner Feb. 15 in the Waldorf-Astoria, New York. Mason Britton, vice-president of McGraw-Hill Publishing Co. and president of the Associated Business Papers, Inc., was one of the two winners of silver medals.

A bronze medal was awarded in the automotive field to Erwin Wasey & Co., Inc., for its campaign for the Air Transport Association. Honorable mentions were awarded to N. W. Ayer & Son, Inc., for its Ford Motor Co., and another for its Lincoln advertisements; J. Stirling Getchell, Inc., for its transcontinental & Western Air series; to Fuller & Smith & Ross, Inc., for its work with the Aluminum Co. of America; and Young & Rubicam, Inc., for excellence of copy in its Packard Motor Car Co. advertisements.

National Aeronautic Assoc. Meets at Denver, July 7-10

The National Aeronautic Association, which held its regular 1940 Annual Meeting at New Orleans, La., Jan. 10-12, will hold a second convention at Denver, Colo., July 7-10. The summer meeting will be the N.A.A.'s first annual gathering under a new plan of organization adopted at New Orleans. A Mid-West Air Show will be held at Denver on July 4-6.

Canada's Automobile Exports Increasing

Canada's automobile exports continue to increase. In January, 1940, automobiles and parts amounted to $3,737,064, as against $2,687,218 in January, 1939.

Buick Erecting New Buildings at Flint

Buick division of General Motors will shortly launch the construction of two new buildings with accompanying docks, and receiving and shipping facilities, as the initial step in a new program of plant renewal and expansion at Flint, Mich. Immediate construction will include a new plant to house manufacture of axles, with the rearrangement of plant and equipment for the production of axle gears, and a large addition to the sheet metal plant providing for expanded facilities in this department.

Razing of one factory building, to make way for the new axle plant, already is under way while destruction of a 300 foot section of the present sheet metal plant to make way for the new addition to this department has been contracted for, according to O. W. Young, general manufacturing manager.

Besides the two new buildings, a series of three bridges will be constructed to facilitate interplant communication and shipping while an unusually long conveyor line will be built to carry finished axles from the new plant to the final assembly department.

The new axle plant will be 959 ft. long by 138 ft. wide of monitor type steel, brick and concrete construction and will provide 156,000 sq. ft. of floor space including covered docks 90 feet deep providing facilities for simultaneous loading and unloading of 14 trucks and three freight cars.

WPA Reports Expenditures For Trucks and Tractors

Expenditures for motor trucks and tractors bought for use on WPA projects, as distinguished from rented equipment, amounted to $6,559,000 from the beginning of the program in July 1935 through September, 1939, figures just released by the Work Projects Administration disclose. During the past fiscal year these purchases totaled $3,562,000. However, rentals for motor vehicles during the 1935-1939 period reached the grand total of $394,171,000, of which local project sponsors paid $196,794,000 and the Federal government $197,377,000. This figure includes rentals of some owner-operated vehicles.

Houdaille - Hershey Declares Dividends

Houdaille - Hershey Corp. has declared the regular quarterly dividend of 62½ cents per share on its Class A No Par Value stock, payable April 1, 1940, to stockholders of record at the close of business on March 20, 1940. The company also has declared an interim dividend of 25 cents per share on its Class B No Par Value stock, payable March 14, 1940, to stockholders of record at the close of business on March 5, 1940.

Committee Urges Prompt Buying of Critical Materials

The War and Navy Department's interdepartmental commitee on strategic materials, the agency concerned with the $100,000,000 strategic and critical material purchasing program, has advised President Roosevelt that now is the time to buy. The committee set forth these points:

1. Commercial stocks in this country of many vital raw materials are now considerably below normal.
2. Prices of most of the desired items are more favorable at present than for some time past.
3. Difficulties in both supply and transportation, as well as higher prices, are likely to be encountered if the

present war continues and increases in intensity.

4. In the event of unlimited warfare on sea and in the air, possession of a reserve of these essential supplies might prove of vital importance not only in the national defense but in strengthening the policy of neutrality.

5. The materials to be purchased can at any time be converted into cash, and in the event of an emergency they will be worth much more than their cost.

Mr. Roosevelt transmitted the committee's report to Congress when he recommended that $15,000,000, the amount suggested in his budget message, be made available immediately. Last year Congress appropriated $10,000,000 but this amount will shortly be exhausted, the President's memorandum said.

The entire program, running over a four-year period and involving a total expenditure of $100,000,000, thus far has resulted in contracts being awarded for chrome ore, tungsten, manganese, pig tin, optical glass and other materials considered necessary for the national defense. The suggested $15,000,000 appropriation for next fiscal year was pared down to $12,500,000 by the House Appropriations Committee, but of that amount only $5,000,000 was made immediately available by the Senate.

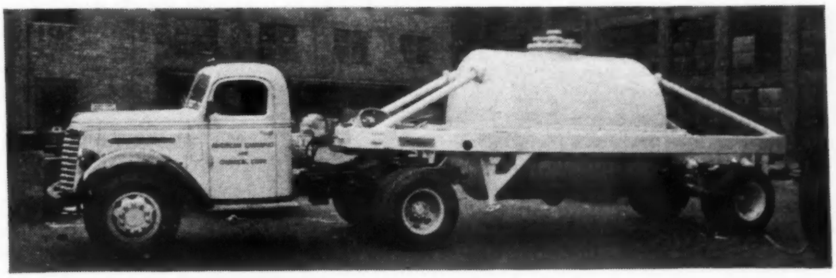
To Publish Standards On Threaded Products

The Interdepartmental Screw Thread Committee, successor to the National Screw Thread Commission which was abolished in 1933, will soon publish revised standards covering bolts, nuts and other threaded products, bringing the former standards up to date in certain important respects.

Lyman J. Briggs, committee chairman and director of the National Bureau of Standards, reports that lack of time has prevented a further revision but that a more complete revision is under way.

Created by the Secretary of Commerce last September to safeguard the interests of the government in the purchase of wrenches, threading tools, limit gages as well as bolts, nuts and other threaded products, the committee is composed of representatives of the War, Navy and Commerce Departments and four advisory representatives from the American Society of Mechanical Engineers, Society of Automotive Engineers, American Standards Association, and the Sectional Committee on Standardization of Screw Threads.

Abolishment of the commission in 1933, Mr. Briggs reports, left the status of its standards in some doubt, although its report, now out of print, has been in demand as a practical and comprehensive work on screw thread standards.



For Transporting Chemicals

The American Cynamid & Chemical Corp. recently placed two truck tanks of the type shown here in service handling a corrosive solution. Of 2500-gal. capacity, the tanks have been lined with rubber by the B. F. Goodrich Co., Akron, Ohio, using its patented Vulcalock process of adhering rubber to metal, and the Triflex method of construction.

Ford Introduces a New 8-Hp. Model in England

The Ford Motor Co. has introduced in England a new 8 hp. model that would, but for the war, have made its first appearance in public at the London car show at Earls Court in October last. The showing of this with other Ford cars would also have been the first appearance of this make for over 20 years past at an English exhibition held under the auspices of the Society of Motor Manufacturers and Traders. Ford was "returning to the fold" after holding an annual show of its own at the Albert Hall, London, during the same period each year as the Society's show.

The new Eight, like the model of the same rating it supersedes, has a four-cylinder L-head engine of 933 c.c. (58.6 cu. in.), the bore and stroke being 56.6 by 92.5 m.m. In general, too, the chassis is on much the same lines as the earlier type; it has a wheelbase of 90 in. and a track of 45 in., three speeds with synchromesh on second and high, transverse springs with four double-acting shock absorbers and Girling mechanical brakes. The engine develops 23.4 b.hp. at 4000 r.p.m. and has a three-bearing cast-steel crankshaft, aluminum pistons, pressure lubrication, non-adjustable valve tappets, down-draft carburetor and four-point mounting.

It is in the two-door saloon body where the chief differences between the old and the new models occur; the body, in fact, is of entirely new design, with a new style radiator grille and hood. It is noticeably roomy for a car of 8 hp. rating and has an exceptionally capacious rear locker for luggage and the spare wheel, with an exterior door to fold down as a platform for additional items. The old body had quite a small rear locker built flush into the rear panel and having access from the interior only.

Known as the "Anglia" model, the new Eight is offered in two styles, standard and de luxe; prices in England are £126 and £136 respectively, with a sliding roof (de luxe style only) £5 extra. The weight of the car is 1600 lb.

Canadian Car Output Off Slightly in '39

Production of automobiles in Canada during last December totaled 16,978 units compared with 16,756 in the previous month, and 18,614 in December, 1938. The output included 11,491 passenger cars and 5487 trucks. The following is a tabulation of the number of units produced in December, 1939, and all of 1939, with comparisons for 1938 and 1937.

	1939 Units	1938 Units	1937 Units
January	14,794	17,624	19,583
February	14,300	16,066	19,707
March	17,549	16,802	24,901
April	16,891	18,819	17,081
May	15,706	18,115	23,458
June	14,515	14,732	23,841
July	9,135	9,007	17,941
August	3,475	6,452	10,742
September	3,921	6,089	4,417
October	9,640	5,774	8,103
November	18,412	17,992	16,574
December	16,978	18,670	21,115
Totals 12 mon.	155,316	166,142	207,153

Canda Cloth Sales Show 20% Gain

P. B. Baldwin, general sales manager of Collins & Aikman Corp., reports that the sale of canda cloth, newest of the Collins & Aikman line, has already jumped 20 per cent above last year's sale of mohair velvet. Mr. Baldwin's figures cover the period from the introduction of canda cloth with the 1940 model cars last October, to the middle of January.

The new cloth, designed specifically for automotive use, is available on one or more models of most manufacturers. Its designers point out that it has all the advantages of a mohair velvet—long life, ease of cleansing, and rich texture—combined with the smart appearance and crisp tailoring of a flat cloth.

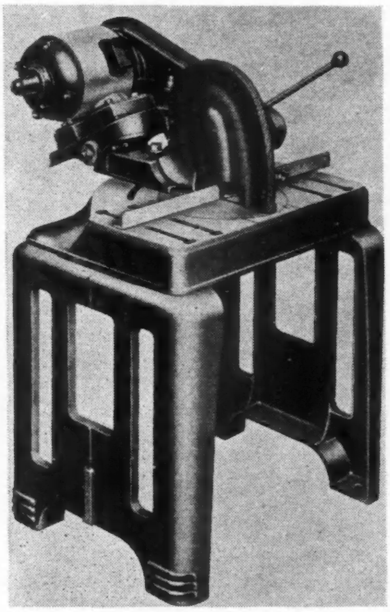
MEN AND MACHINES

(*Continued from page 163*)

polished surface. By switching to a saw blade this same unit can be used for cutting wood. The machine has a capacity up to 2 in. diameter, or material up to 2 in. by 6 in.

AN interesting solution to the problem of obtaining smooth operation of heavily loaded conveyors and kiln cars carrying parts through high temperature "furnaces," was recently worked out at the plant of the Champion Spark Plug Co., Ceramic Division, Detroit.

Two identical continuous chain driven conveyors with a total length of 275 ft. carry spark plug insulator "decorating setters" up to and away from an 1800-deg. Fahr. kiln at this plant for the firing on of type and trade marks in overglaze colored enamel. The conveyors are fitted with flat plates de-



Delta Mfg. Co.'s cut-off machine

signed to support special nickel-iron trays loaded with insulators.

These plates slide on horizontal guide plates on both sides of the entire length of the conveyor—from loading stations through the kiln and back through a cooling zone to final inspection, where insulators are removed and trays reloaded.

Driven by a 2½-hp. motor, the slow moving conveyors, when first installed, had a tendency to move in small jerks rather than smoothly. Complaints of headaches on the part of operators sitting facing the conveyor inspecting insulators were suspected of being traceable to this motion.

Normally, conventional lubrication of the guides might have taken care of the situation. Two factors, however, obviated the use of customary oil or grease lubrication: (1) grease or foreign matter could not be permitted where it might get on the ware, and (2) conventional lubricants would burn off, carbonize and flake as the red-hot setters were carried from the kiln to the cooling chamber.

The problem was solved through the development of a method of "dry" lubrication, using a lubricant impervious to heat. At a point just beyond where the conveyor leaves the kiln, two automatic Norgren lubricators of the air-operated spray type were installed in such a manner as to spray "dag" colloidal graphite suspended in carbon tetrachloride directly on the lower bearing surfaces and chain links of the conveyors as the plates passed over the lubricator.

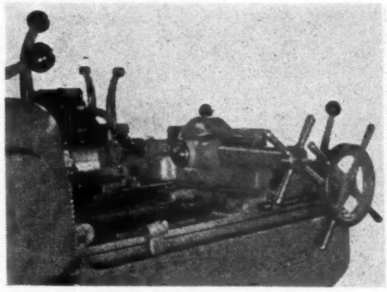
Since at this point the conveyor has a temperature of around 375-400 deg. Fahr., the carbon tetrachloride evaporates almost instantaneously, leaving a coating of dry graphite on the wear surfaces. A small amount of kerosene

and oil is added to the carbon tetrachloride to slow up evaporation slightly—to allow the graphite to completely cover and lubricate the bearing surfaces.

When first installed, the automatic lubricator was operated periodically during the day. Since then, it has been found that operating it for a short period once a day is adequate to maintain complete lubrication, as the colloidal graphite adheres firmly to the surface to give satisfactory twenty-four hour lubrication.

The resulting smooth operation of the conveyor was accompanied by a sharp drop in headache complaints—and, incidentally, also reduced power consumption materially.

THE Landis Machine Co., Waynesboro, Pa., has developed a new type of carriage front which can be used on either its Landmaco or Landis standard threading machines. This carriage front is provided with a collet holding device of the type usually employed on automatic screw machines. The collet chuck is actuated by a handwheel, the handwheel being located so that it occupies approximately the same position as the handwheel of the standard carriage front.



Landis Machine Co.'s new collet chuck carriage front.

Separate collets are employed for each diameter of work. The collets can be interchanged easily; it is merely necessary to rotate the handwheel a few turns to release the collet so that another one of the desired size can be substituted.

Advantages of this collet chuck carriage front are: First, the assured production of concentric threads, for the work is rigidly held in alignment with the die head; and second, the elimination of gripper markings on the work. Further, long pieces may extend entirely through the collet—a work stop may be employed to position the work with relation to the die head—while very short pieces of work may be positioned by an adjustable work stop located within the bore of the collet.

A NEW alternating-current arc welder was recently placed on the market by K. O. Lee & Son Co., Aberdeen, S. D. This welder is made in three models having capacities ranging from 20 up to 150, 200, and 250 amp., respectively. All three models are regularly built to operate on 220-volt, 60-cycle current, but can be furnished for 440-volt, 60-cycle current when desired.

The smallest size is suitable for sheet-metal work which does not require electrodes over 5/32 in. diameter. The intermediate size is adapted for general purpose welding in production and repair shops, while the largest model is particularly suited for shops handling heavy welding work. This machine handles 1/16 to ¼ in. electrodes and consumes a maximum of 7.5 kw. per hr.

AN improved hydraulic injection molding machine for plastics, designed and built by The Watson-Stillman Co., Roselle, N. J., is devised for faster operation, increased capacity and production, and economies in operation and maintenance. One of its features is the zone heat control which provides ingeniously distributed heat, giving a greater plasticizing capacity to the heating cylinder. The smooth, uniform bore of the cylinder offers no place for material to lodge and facilitates changing from one color to another.

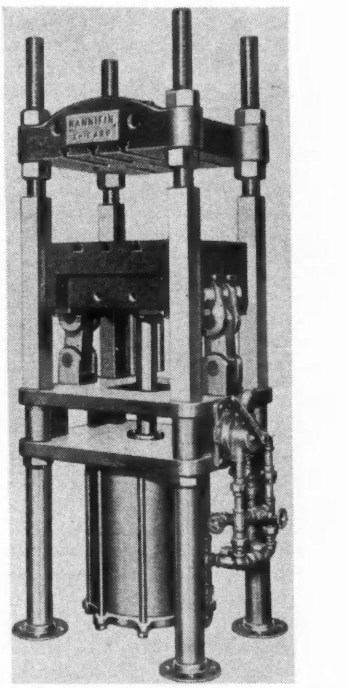
The exceptionally large opening (24

in. max.) between die plates, with adjustment of 18 in. on the clamping end, allows for the accommodation of dies 6 in. thick and up. The toggle-clamping device affords positive clamping of dies having up to 125 sq. in. projected area.

Two material cylinders are available for use with this machine. The maximum weight of material injected per cycle with the 2 3/16 in. cylinder is 6 oz. at a pressure of 50,000 lb. per sq. in. With the 2¾ in. cylinder the maximum weight is 8 oz. at a pressure of 32,000 lb. per sq. in. The stroke of the injection plunger is 9 in.; speed of injection plunger 150 in. per min.

The machine itself is arranged for full automatic, automatic single cycle and manual control. Working pressure is 2050 lb. per sq. in.

A NEW 50-ton capacity plastic molding press has been developed by the Hannifin Mfg. Co., Chicago. It is air operated and requires about 80 lb. unit pressure to develop 50 tons. Higher air pressures can be used to increase this to 70 tons. Overall height is approximately 7 ft., and distance from floor to lower platen when open is 46 in. Distance between columns is 22 in.; clearance between platen and top strain head is 17½ in. To accommodate various size dies, the strain head is adjustable for 12 in. permitting a maximum



Hannifin Mfg. Co.'s new 50-ton capacity molding press.

daylight space of 29½ in. The platen stroke is 8 in. Provision is made for the application of ejector pins or a separate ejector cylinder.

A unique power stroke makes the Hannifin press particularly suited for compression molding of thermosetting plastics. The pressure is developed through a combination lever and toggle mechanism developed specially for this kind of work. The platen advances rapidly but decelerates when the dies begin to close allowing time for the compound to soften. The rate of up-travel and the return speed are both adjustable to suit the application. Full tonnage is applied to break the mold when reversing the cylinder.

If air is not available, this same press can be furnished with a completely self-contained hydraulic power unit. Hannifin Mfg. Co. offers a similar press in a 15-ton capacity.

MAKING spot welds in semi-inaccessible locations such as automobile reveal and garnish molding where intricately shaped, thin section welding points could not stand up under continued operation, is now being done with an unusual combination of short-circuiting gun and clamping fixture. It is reported that the arrangement has more than tripled production speed over previous methods.

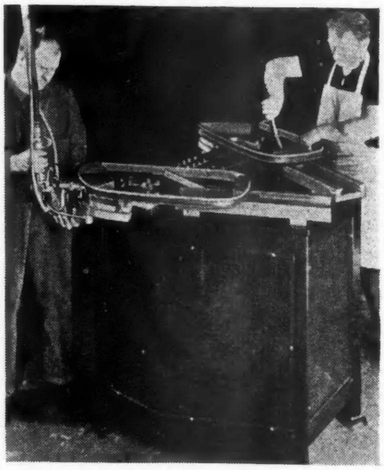
The fixture for either one or two man operation, designed and built by Progressive Welder Co., Detroit, has an enclosed transformer short coupled to bus-bars which also serve as nesting

dies for the work. A single hydraulically operated spot welding gun, of the short-circuiting type is used alternately by the two operators when production speeds require two man operation.

In operation, the window reveal is first secured against the bus-bar die by means of thumb clamps. The garnish molding is then placed in position over the nesting die which is so designed that when the hand clamp brings the molding under tension, the molding is forced securely against the reveal.

The gun used is of the pincher type, pressure being supplied by an hydraulic pressure booster. To permit its admission in the concave side of the garnish molding only the tip of the upper electrode is of relatively thin section. Thus, ample cooling can be afforded to prolong electrode life. The lower electrode is of the button type contacting the bus-bar. Being suspended midway between the two operating stations, the welding gun is used by one operator while the other is placing and removing the work.

THE Ross Operating Valve Co., Detroit, has developed a solenoid operated, air valve to meet manufac-

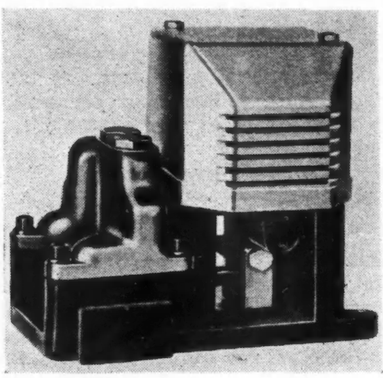


Self-contained spot welding fixture built by Progressive Welder Co.

turers' demands for high speed operation of welding guns. Although it is claimed that this new Ross valve has operated at considerably higher speeds on experimental work, it is now regularly delivering 400 welds a minute on production jobs.

OTHER new developments in machine tools and allied equipment which have been brought to the attention of *Men & Machines* are as follows: The addition of model J-12 to the line of bending presses manufactured by the Steelweld Machinery division of the Cleveland Crane & Engineering Co., Wickcliffe, Ohio. This press will handle plate up to 12 ft. by ½ in. between housings and up to 14 ft. over total length of bed and ram. The press may be used for bending, forming, blanking, drawing, rubber-forming and multiple-punching operations . . . Kato Engineering Co., Mankato, Minn., has designed a line of direct-current motors which in addition to driving a piece of equipment also furnish 60 cycle AC current for the operation of an auxiliary function. One interesting applition of the Kato special DC motor is on the Doall contour shaping machine manufactured by Continental Machines, Inc. To facilitate threading the saw through an internal sawing job, it is necessary to cut the band, insert one end of the saw through a starting hole and then butt weld the ends together. The Doall machine has a built-in butt welding device for joining the band saw ends. When the machine is supplied to customers who are in direct current areas, it is equipped with a Katolight DC main drive motor which also provides the alternating current necessary for the operation of the butt welder . . . A new radiation-type vacuum thermocouple for use wherever exceptionally high sensitivity and very rapid response are needed has been announced by the General Electric Co. This thermocouple is designed to fill a specific need created by the develop-

ment and use of controlled protective-atmosphere furnaces for processing materials at high temperature. Possible applications include temperature measurement and control in brazing, heat-treating furnaces, glass heat-treating . . . Recently perfected by Stewart-Warner Corp. engineers to prevent over-lubrication of ball and roller bearings, Alemite Lubriguards, a new line of fittings and bushings for industrial machinery, are so constructed that they signal the operator when a bearing is sufficiently lubricated. The Alemite Lubriguard fitting is installed directly into the bearing. In operation, with an Alemite hydraulic-type pressure gun applied to the Lubriguard fitting, the lubricant is forced through an inlet of the fitting, and thence into the anti-friction bearing. When a predetermined amount of back pressure is developed in the bearing, excess lubricant appears at the vent, a signal to the operator that further lubrication is inadvisable . . . A new vise designed for production machine work is being offered by the Larkin Air Vise Co., Portland, Conn. As its name implies, the Larkin Air Vise is pneumatically operated. It is available in five sizes ranging from four to eight inches in jaw width . . . Ahlberg Bearing Co., Chicago, has developed a line of bearing units known as CJB Simplex machine units. These are available in three capacities; for light, medium and heavy loads, with either single row, double row or self-aligning bearings.



Solenoid operated air valve built by Ross Operating Valve Co.

In the light series the bearings are mounted directly on the shaft; whereas, the medium and heavy units mount through a split adapter sleeve in a tapered bore bearing. A new type, non-drag seal has been developed, using Neoprene as the sealing material . . . A new, lightweight back-up pad for disc sanders has been developed by the Columbian Rope Co., Auburn, N. Y. Available in the nominal inch sizes of seven, eight and nine, it has a molded plastic center. Both the center and the flexing surface are made of rope fiber bonded and molded at the same time to prevent the two from separating. —H. E. B., Jr.

Clark Utility Ball-Bearing Drills

Jas. Clark, Jr., Electric Co., Louisville, Ky., manufactures ⅜-in. improved Clark utility drills, as illustrated herewith. These drills, specially designed for high-speed production work, are said to be easier to handle, in better balance, more efficient and more powerful than previous designs. Among the applications specially in view when the company developed these drills were heavy-duty production and maintenance work in automobile service stations, industrial plants, and bus and trailer manufacturing shops.

A special feature is the double-reduction gearing, which keeps the offset between the top of the motor housing and the center of the drill a minimum. Ball bearings are used on the armature shaft, both intermediate gears, and the spindle. The spindle ball bearings take both radial and thrust loads. Gears are made of heat-treated alloy steels. The drills are equipped with a two-pole, automatic, quick-break safety switch with a conveniently-located lock. The motors are provided with air ducts and are cooled by ventilating fans. Frame, gear plate and gear head are cast of aluminum alloy.

A New Method of Determining Damping Coefficients--

IN THE determination of the vibration characteristics of high-speed crankshafts, the damping factor of the material of which the crankshaft is made is of importance, because it determines the maximum stress which can be induced by torsional vibration. Heretofore these damping factors generally have been determined in an apparatus in which the test specimen, a cylindrical torsion bar, is clamped with one end and has the other end—supported by some kind of anti-friction bearing—provided with an inertia mass of flywheel; the torsion bar is deflected through a certain angle and then released, and a scriber secured near the circumference of the inertia mass traces a record of the dieing oscillations on a strip of paper that is moved radially with respect to the axis of oscillation, by clockwork. For a given amplitude of oscillation a certain amount of energy is stored in the torsion bar when in the position of maximum deflection. Owing to damping effects, the amplitude decreases with each succeeding deflection. The decrease in amplitude from one deflection to the next represents a certain loss in stored energy and this, of course, is the energy absorbed by the damping forces. The ratio of the energy absorbed by the damping force during one oscillation to the energy stored in the bar at the beginning of the oscillation is the damping coefficient; it is a non-dimensional quantity and is usually expressed in per cent.

Dr. J. Geiger of the MAN firm, pioneer manufacturers of Diesel engines, in an article in *Automobiltechnische Zeitschrift* for Dec. 25, 1939, points out that this method of determining the damping factor is not in accordance with the conditions under which damping takes place when a crankshaft is vibrating torsionally at a critical speed, and he has devised a new apparatus in which these conditions are more closely simulated. It is known as the resonance method and is based on the following principle.

If an exciting force P acts on an arm secured to a torsion test bar, in the event of resonance, when the exciting force is displaced 90 deg. relative to the deflection A, the work done by the exciting force is always $PA\pi$, regardless of the nature and magnitude of the damping forces. This work must be absorbed in overcoming the damping forces during one oscillation. As may be seen from Fig. 1, the elastic energy stored in the torsion bar at maximum deflection is $CA^2/2$. Consequently, the energy absorbed by the damping effects during one oscillation, in per cent of the potential energy or elastic energy, is given by

$$U = \frac{PA\pi}{CA^2/2} = \frac{2P\pi}{CA}$$

Therefore, if we have an experimental apparatus which permits of accurately determining the exciting force P, it is an easy matter to find the damping force. Since for all materials with a straight-line elastic characteristic the value of the elastic coefficient C remains constant, it is only necessary to determine P and A—both of which naturally, must be referred to the same distance R from the axis of the torsion bar.

Experimental apparatuses of the type in which the test specimen is set oscillating and is then allowed to come to rest, are usually suspended by a wire, in order that there may be a minimum transmission of energy to the surroundings. This applies particularly to apparatus of the Föppl-Pertz type. Dr. Geiger's apparatus, on the other hand, is built on a very stiff base plate and provided with bearings of adequate rigidity, to achieve this same object, that is, to minimize the transmission of vibration energy to surrounding parts. He says experiments have shown that

the "radiation" of energy to the stiff base plate is negligibly small. Even in the case of large amplitudes of the torsion bar, such as 0.35 in. at 10-in. radius, the motion of the base plate is so small that it can hardly be felt with the finger-tips, even though, as is well known, human finger-tips are very sensitive and can perceive motions of the order of 0.0004 in. From experience with Diesel engines, on the other hand, it is known that even in the case of very severe vibration of the foundation, the loss of energy occasioned thereby is so small that the difference in the specific fuel consumption cannot be measured.

Fig. 2 shows Dr. Geiger's experimental apparatus. The test specimen, in the form of a cylindrical torsion bar, is rigidly clamped in a bearing at its right end, while at the opposite end it carries an inertia disk and is supported by a ball bearing. Both bearing supports, and especially that in which the bar is clamped, are of very rigid design and rigidly mounted on the base plate. At one end of the inertia disk there is mounted a shaft which carries an eccentric inertia mass and is connected to an electric motor through a very flexible rubber coupling. When the shaft is rotated, a rotating centrifugal force is set up, and this force may be resolved into a radial and a tangential component (relative to the inertia disk), each component varying in sine-wave fashion with relation to time. The radial component is taken up on the ball bearing, but the resulting friction in the ball bearing can be neglected even at high speeds without impairing the accuracy of the results seriously. The tangential component tends to turn the inertia disk around its axis and consequently to deflect the bar torsionally.

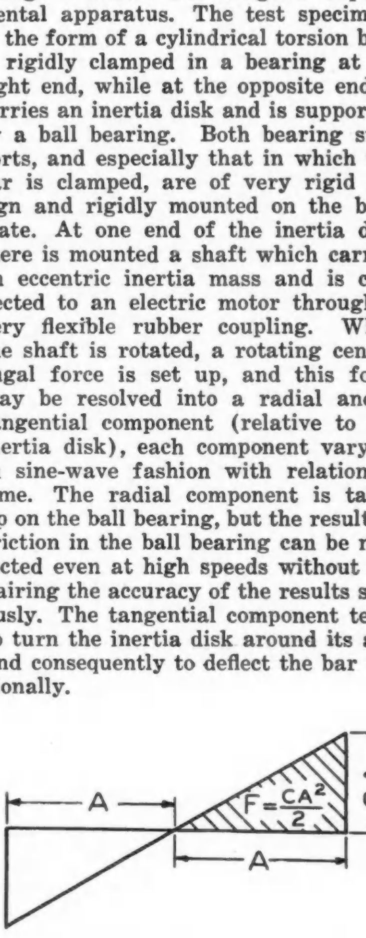


Fig. 1—Diagram of energy stored when a torsion bar of a material with a straight-line elastic characteristic is deflected.

At any given speed of rotation (read off on the tachometer) this component —the exciting force *P*—is completely determined by the dimensions of the eccentric and the speed. The elastic constant of the torsion bar can be determined by a single static test. Dr. Geiger's investigation had for its particular object to determine the damping characteristics of cast iron, which has been used for crankshafts to a certain extent, and he says the objection might be made that the straight-line law does not apply to cast iron, at least not when subjected to bending forces. To meet this objection he says that in his experiments with cast iron

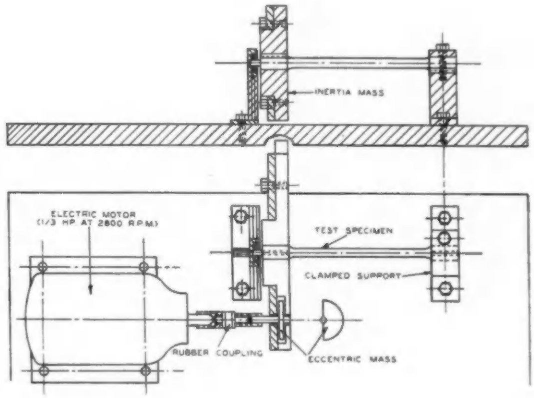


Fig. 2—Geiger apparatus for the experimental determination of damping coefficients under conditions of resonant (constant-amplitude) vibration.

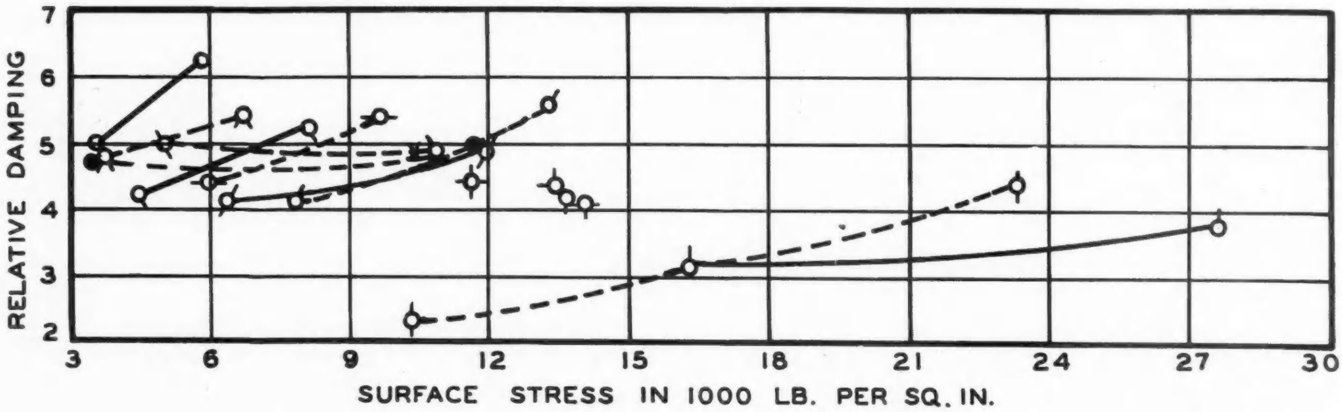


Fig. 3 — Damping coefficients of eight grades of cast iron and two grades of steel (two curves on right) as related to surface stress in torsional specimen.

in torsion, within the stress limits which are usually set in practice, he has found no serious deviation from the straight-line law. However, the elastic constant C can be determined also dynamically from the inertia mass M and the frequency Ne by means of the equation

$$Ne = \frac{30}{\pi} \sqrt{\frac{C}{M}}$$

This method is to be preferred, as it more closely simulates the conditions obtaining when a crankshaft vibrates torsionally.

From what has been said in the foregoing, it follows that the relative damping for an amplitude A of oscillation can be determined directly from the equation

$$U = \frac{P\pi}{CA/2} = \frac{2P\pi}{CA}$$

where P is the force that excites the oscillation; C, the spring constant, and A, the amplitude. Since the stress in the specimen is proportional to the amplitude of the oscillation, it is possible to determine the damping coefficient directly from the torsional stress S at the surface of the bar. With a known spring constant C, the deflection produced by a given force P when acting statically can be determined by the equation

$$A_{stat.} = \frac{PR^2}{GJ_p}$$

where P is the force causing the torsional deflection; R, the radius from the axis of the specimen at which the force is applied and the deflection measured; G, the modulus of elasticity of the material in torsion, and J_p, the polar moment of inertia of the section of the bar. It is therefore quite a simple matter to determine the build-up of the vibration, that is, the ratio of the dynamic amplitude A to the static amplitude A_{stat}.

In the past, in discussions on the subject of damping forces, it has been usu-

ally assumed that these forces are proportional to the frequency or the rate of oscillation, and H. Wydler in his work entitled *Drehschwingungen in Kolbenmaschinenanlagen und das Gesetz ihres Ausgleichs* (Springer, Berlin, 1924), made this assumption and on the basis thereof calculated certain damping coefficients. Dr. Geiger says, however, that in 1934 he showed that most of the damping effects on crankshafts are not proportional to the speed and that even when all of the damping influences are combined the assumption that they vary directly with the speed is decidedly at variance with the experimental results. So far as internal molecular friction is concerned, tests were made first by the Englishman Rowett and later by Otto Pöpple and some of his pupils in Germany, notably Becker and Bankwitz. These investigations covered many different materials, especially many grades of steel, and also copper and light metals, and the results in all cases showed that within the range of rate of stress reversals of 1 per min. to 3000 per min. the damping effect is independent of the frequency. It is only in the case of stress reversals at a lower rate than one per minute that there is a change, and such low frequencies, of course, are of no significance in connection with crankshafts of high-speed combustion engines. Dr. Geiger says no such investigations have been made on cast iron so far, but he felt safe in assuming that with this material also the damping coefficient is not affected by the frequency between the limits of one and 3000 stress reversals per minute.

One of the damping factors with every testing apparatus is the air friction, but he feels certain that with his apparatus, in which all the principal parts are bodies of revolution which do not stir up the air to any extent, and which, moreover, have a minimum surface area in contact with the air, this effect is wholly negligible. Investigations were made also with regard to the possible power loss to the base plate, and since even with the limiting amplitude of disk oscillation corresponding to 0.35 in. at a radius of 10 in. it was impossible to detect any motion of the bearing at the opposite end with an indicator having a sensitivity of 0.00001 in., it was concluded that this loss also was negligible.

One of the things discovered in experiments with this apparatus on cast iron torsion-bar test specimens was that when a new bar is first inserted into the machine, it has a relatively high damping coefficient. As the so-called resonance test continues, the damping coefficient decreases gradually, until after about 200,000 stress reversals it assumes a constant value.

Fig. 3 herewith shows the damping coefficients of eight different cast irons and two grades of steel in relation to the stress in the surface of the test bar. It will be seen that the damping coefficients do not vary greatly for the different grades of cast iron. It was found that irons which had a relatively low tensile strength showed the highest damping coefficients. Except in two cases, the damping coefficients increase moderately as the stress increases. Coefficients were plotted for the stress range 2800—14,000 lb. per sq. in., which is the range of greatest interest from the standpoint of building up torsional vibrations at critical speeds. It will be seen that for a given surface stress in the specimen, the damping is from 80 to 120 per cent greater with cast iron than with steel.

The results of this investigation on the torsional damping coefficients of cast iron were summarized as follows:

For the determination of the damping coefficient under conditions of resonance, it is advisable to utilize a method in which there is resonant excitation by a harmonic force, rather than the method by which a test bar provided with an inertia disk is deflected from the position of equilibrium and then released and allowed to oscillate until it comes to rest. This applies particularly with different grades of cast iron.

The damping is materially greater when the test specimen is first subjected to the oscillating force, and it gradually approaches a constant value, which usually is attained after approx-

(*Turn to page 263, please*)

Proposed Trade Practice Rules for the Automotive Industry

The Federal Trade Commission on Feb. 19, made public proposed trade practice rules for the automobile industry for the consideration and hearing of interested or affected parties. Such rules are made available pursuant to the Commission's trade practice conference procedure and under the following public notice issued by the Commission:

"Notice of Hearing, and of Opportunity to Present Views, Suggestions or Objections

"Opportunity is hereby extended by the Federal Trade Commission to any and all persons, partnerships, corporations, associations, organizations, groups or other parties affected by or having an interest in the proposed trade practice rules for the Automobile Industry to present to the Commission, orally or in writing, their views concerning such rules, including such pertinent information, suggestions or objections, if any, or such amendments or additions thereto, as they desire to submit. For this purpose they may, upon application to the Commission, obtain copies of the proposed rules. Written communications of such matters should be filed with the Commission not later than March 20, 1940. Opportunity for oral hearing and presentation will be afforded at 10 A. M., March 20, 1940, in Room 332, Federal Trade Commission Building, Constitution Avenue at Sixth Street, Washington, D. C., to any such persons, partnerships, corporations, associations, organizations, groups or other parties as may desire to appear and be heard. After giving due consideration to all matters submitted concerning the proposed rules, the Commission will proceed to their final consideration."

The proposed rules relate to the sale and distribution of the products of the industry embracing all the different types and kinds of automobiles (passenger and commercial cars, trucks, etc.), and parts, accessories and equipment therefor. The industry includes, among others, the automobile manufacturers; also, the automobile dealers and distributors throughout the country, of which there are approximately 45,000.

Proceedings before the Commission were instituted in the matter upon application of members of the industry. In the course thereof, a general trade practice conference of the entire industry was held, under the auspices of the Commission, in Detroit, Mich. The issuance of the present draft of proposed rules, and the announcement respecting hearings thereon, are further steps in the regular procedure applicable in such matters.

The purpose of the proceeding is to establish comprehensive trade practice rules for the protection of the industry and the purchasing public; to provide for the elimination and prevention of unfair methods of competition and other harmful trade practices; and to maintain, in the public interest, fair competitive conditions for the conduct of the business.

All persons, partnerships, corporations, associations, organizations, groups or other parties engaged, or otherwise concerned, in the manufacture, sale and distribution of the products of this industry, and all other interested or affected parties, including consumers, their organizations or representatives, are afforded opportunity to be heard in the premises and to present their views, suggestions or objections, if any, with respect to the proposed rules, including such amendments or additions thereto as they may desire to submit, for the consideration of the Commission.

Text of Proposed Trade Practice Rules for the Automotive Industry

(As released February 19, For Hearing March 20, 1940)

(NOTE: THESE RULES HAVE NOT BEEN APPROVED BY THE FEDERAL TRADE COMMISSION. They are a draft of proposed rules which are made available to all interested or affected parties for their consideration and for submission of such views, suggestions or objections as they may desire to present. Due consideration thereof will be given by the Commission before proceeding to final action on the proposed rules.)

Group I

Rule 1—Deception in General:

It is an unfair trade practice to use, or cause or promote the use of, any advertisement, description, guarantee, warranty, testimonial, endorsement, depiction, illustration, radio broadcast, brand, mark or label, or any other representation or selling method, (a) which has the capacity and tendency or effect of misleading or deceiving purchasers, prospective purchasers or the consuming public with respect to the operation, performance, use, fuel or oil consumption, mileage, age, size, material, content, orgin, production, year, model, type, price, grade, quality, quantity, manufacture, sale or distribution of any motor vehicle or other product of the industry or of any component of such product; or (b) which is false, misleading or deceptive in any other material respect.

Rule 2—Misrepresenting Character of Business:

It is an unfair trade practice for any person, firm or corporation to hold himself or itself out as a manufacturer's representative, wholesaler or dealer, when such is not the fact, or in any other manner to misrepresent the character, extent or type or his or its business.

Rule 3—Altering of Trademark to Deceive:

The altering of the trademark or the distinctive features of products of the industry or their containers in such manner as to mislead or deceive purchasers, prospective purchasers or the consuming public, in the sale, distribution or purchase of the products, is an unfair trade practice.

Rule 4 — Imitation of Trademarks, Trade Names, Etc.:

The imitation or simulation of the trademarks, trade names, labels or brands of competitors, with the capacity and tendency or effect of thereby misleading or deceiving purchasers, prospective purchasers or the consuming public, is an unfair trade practice.

Rule 5—Deceptive Description of Motor Vehicles:

(a) It is an unfair trade practice to represent, directly or indirectly, through pictures, displays, advertising or otherwise, that motor vehicles sold or offered for sale are equipped with so-called "Standard Equipment" or certain other equipment, when such is not the fact.

(b) It is an unfair trade practice to represent, directly or indirectly, through pictures, displays, advertising or otherwise, that the price of motor vehicles sold or offered for sale includes so-called "Standard Equipment" only, when in fact it includes such "Standard Equipment" plus optional or extra equipment at additional cost and such information is not disclosed.

(c) It is an unfair trade practice to use any other form of representation which has the capacity and tendency or effect of misleading or deceiving purchasers, prospective purchasers or the consuming public in respect to added equipment, accessories or items which are or are not to be included or charged for.

(NOTE—The term "Standard Equipment" as used in this rule means the items of equipment as defined respectively in the catalogs of the various manufacturers of automobiles as their so-called standard equipment.)

Rule 6 — Misleading Illustrations of Motor Vehicles:

The practice of picturing, in adver-

tisements, sales promotional literature or otherwise, a particular model of motor vehicle and quoting in connection therewith the price of a less expensive model, or of a less expensively equipped vehicle, or quoting any price inapplicable to such model or car pictured, in such manner as to purport that the price so quoted is applicable to the automobile or model depicted, when such is not true in fact; or to use any such depiction or other depictions, or any such price quotations, in advertisements, catalogs, sales literature or other media, in a manner which has the capacity and tendency or effect of misleading or deceiving purchasers, prospective purchasers or the consuming public, is an unfair trade practice.

Rule 7 — Misrepresentation of Prices and Terms as "Special":

It is an unfair trade practice to deceptively advertise or represent certain prices or terms as "Special" when they are in fact regular prices or regular terms.

Rule 8—Fictitious Price Reductions:

Offering merchandise or products of the industry for sale at prices purported to be reduced from what are in fact fictitious prices, or offering such merchandise or products for sale at any purported reduction in price when such reduction is fictitious or is otherwise misleading or deceptive, is an unfair trade practice.

Rule 9—Deceptively "Packing" Cash Delivered Price or "Packing" Finance Charges:

(a) It is an unfair trade practice for any member of the industry, either individually or in agreement, combination, conspiracy or collusion with another person, firm or corporation, to engage in the practice known as "packing the cash delivered price," whereby fictitiously inflated amounts are deceptively included in the price charged purchasers, or whereby charges are assessed or included in the price paid or to be paid by the purchaser, for fictitious items or for services not rendered.

(b) It is an unfair trade practice for any member of the industry, either individually or in agreement, combination, conspiracy or collusion with a finance company or other person, firm or corporation, to engage in the practice known as "finance charge packing" whereby fictitiously inflated amounts are deceptively included in finance charges, or whereby charges are assessed or included in the finance charges, for fictitious items or for services not rendered.

Rule 10—Misrepresentation as to Insurance Rates and Coverage, Interest Rates, Endorsements or Transfers on Installment Contracts, Etc.:

It is an unfair trade practice to make or publish or cause to be made or published, in connection with the sale or offering for sale of motor vehicles or other industry products, any false, misleading or deceptive statements or representations, through advertising or otherwise, concerning insurance rates and coverage, rates of interest or plans respecting methods of financing, finance charges, endorsements, repurchase agreements, or transfers of installment sales contracts; or concerning any other matter respecting finance charges, terms or conditions used or offered in the purchase, sale or distribution of such motor vehicles or products.

Rule 11—Deceptive Concealment in Bills of Sale:

(a) In the sale or distribution of motor vehicles to the ultimate purchasers or the consuming public, bills of sale (customers' invoices or sales slips) should be fully and nondeceptively itemized to show the several items for which charge is made or included in the price paid or to be paid by the purchaser, to the end that deceptive concealment, misunderstanding, misrepresentation, and unfair practices in reference to the transaction may be avoided and prevented. And it is an unfair trade practice to conceal or to

fail or refuse to disclose in such bills of sale (customers' invoices or sales slips) any of the several items for which charge is made by the seller or is included in the price paid or to be paid by the purchaser, such concealment or nondisclosure having the capacity and tendency or effect of misleading or deceiving purchasers, prospective purchasers or the consuming public.

(b) In the issuance by any member of the industry of invoices, bills of sale, or other documents passing from seller to purchaser, covering the purchase, sale or exchange of motor vehicles, parts or accessories, it is an unfair trade practice to combine items, "pad" or increase charges against purchasers, or to withhold from or insert any statement or information, in said invoices, bills of sale, or other documents, by reason of which purchasers are misled or deceived in respect to the transactions represented on the face of such invoices, bills of sale, or other documents, or in respect to any part or item involved therein.

Rule 12—Substitution of Products:

The practice of using or substituting any part, accessory or product for others ordered, or the inclusion of and charging for any part, accessory or product not ordered, without the consent of the purchaser to such substitution or inclusion and charge, or with the capacity and tendency or effect of misleading or deceiving purchasers, prospective purchasers or the consuming public, is an unfair trade practice.

Rule 13—Failure or Delay in Fulfilling Warranties, Guarantees or Promises:

In the sale or distribution by any member of the industry of new or used motor vehicles or parts therefor, it is an unfair trade practice for such member to fail or refuse to promptly carry out in good faith all manufacturers' or dealers' warranties, guarantees, or other promises, express or implied, given or made to purchasers; or to fail or refuse promptly to render service or correct defects as warranted, guaranteed or promised. It is also an unfair trade practice to mislead or deceive purchasers in respect to any such guarantee, warranty or promise, whether by express or implied representation or through concealment of material facts, or by the use of deceptively involved or qualified language in said guarantees, warranties or promises; or to use any other means whereby purchasers are led to believe such guarantees, warranties or promises are more binding upon the seller or afford more protection to the purchaser than is in fact true.

Rule 14—Misrepresentation Regarding Used Motor Vehicles:

(a) It is an unfair trade practice for any member of the industry to advertise or otherwise represent, directly or indirectly, that he owns or has in his possession for sale a particular model and year of used motor vehicle, or that such vehicle is for sale at a certain price or is in a certain condition, when such is not the fact.

(b) In the sale or marketing of used motor vehicles, it is an unfair trade practice for any member of the industry, his agent or representative, to advertise, offer for sale or sell, any such motor vehicle as being the property of an individual or private owner or as having no connection with, or as not being owned or offered for sale by, any dealer or other member of the industry, when such is not true in fact.

Rule 15—Passing Off Used or Driven Motor Vehicles as New:

It is an unfair trade practice to sell, offer for sale, advertise, describe or otherwise represent used or driven motor vehicles as new or undriven motor vehicles when such is not the fact.

Rule 16—Changing Speedometer Reading:

It is an unfair trade practice to fail

to connect, or to disconnect, or to tamper with or change the mileage reading of, the speedometer of any motor vehicle, whether new, used or so-called demonstrator, with the capacity and tendency or effect of thereby misleading or deceiving purchasers, prospective purchasers or the consuming public as to the age, actual mileage, use, service of other condition of such motor vehicle.

Rule 17—Circulating Misleading Price Quotations, Etc.:

The making, publishing or circulating, by any member of the industry, of false or misleading price quotations, price lists, terms or conditions of sale, or reports as to production or sales, whether daily, weekly, monthly, annually or for other periods, with the capacity and tendency or effect of misleading or deceiving purchasers, prospective purchasers or the consuming public, is an unfair trade practice.

Rule 18—Deception to Induce Acceptance of Agreements or Arrangements:

It is an unfair trade practice for any member of the industry, directly or through agents, representatives, or otherwise, to induce persons, firms or corporations to enter into distributor or dealer agreements or other arrangements involving the purchase and sale of automobiles, trucks, accessories, or other industry products, through misleading or deceptive statements or representations as to sales or profit possibilities or permanency of contract, or through any other type of misrepresentation.

Rule 19—Inducing Breach of Contract:

Inducing or attempting to induce the breach of existing lawful contracts between competitors and their customers or their suppliers, or between a competitor and his distributor or agent, by any false or deceptive means whatsoever, or interfering with or obstructing the performance of any such contractual duties or services by any such means, with the purpose and effect of unduly hampering, injuring or prejudicing competitors in their businesses, is an unfair trade practice.

Rule 20—Procurement of Competitor's Confidential Information by Unfair Means and Wrongful Use Thereof:

It is an unfair trade practice for any member of the industry to obtain information concerning the business of a competitor, by bribery of any employee or agent of such competitor, by false or misleading statements or representations, by the impersonation of one in authority, or by any other unfair means, and to use the information so obtained in such a manner as to injure said competitor in his business or to suppress competition or unreasonably restrain trade.

Rule 21—Defamation of Competitors or Disparagement of Their Products:

The defamation of competitors by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or by other false representations, or the false disparagement of the grade, quality, performance or manufacture of the products of competitors or of their business methods, selling prices, values, credit terms, policies or services, is an unfair trade practice.

Rule 22—Commercial Bribery:

It is an unfair trade practice for a member of the industry, directly or indirectly, to give, or offer to give, or permit or cause to be given, money or anything of value to agents, employees or representatives of customers or prospective customers, or to agents, employees or representatives of competitors' customers or prospective customers, without the knowledge of their employers or principals, as an inducement to influence their employers or principals to purchase or contract to purchase products manufactured or

sold by such industry member or the maker of such gift or offer, or to influence such employers or principals to refrain from dealing in the products of competitors or from dealing or contracting to deal with competitors.

Rule 23:

(a) *Forcing Purchase of Unwanted Products:* The practice of coercing the purchase of one or more products as a prerequisite to the purchase of one or more other products, where the effect may be to substantially lessen competition or tend to create a monopoly or to unreasonably restrain trade, is an unfair trade practice.

(b) *Tying Contracts or Exclusive Dealing Arrangements:* In respect of products sold for use, consumption or resale within the United States or place subject to its jurisdiction, it is an unfair trade practice for any member of the industry to make a sale or contract for the sale of any such products, or to fix a price charged therefor, or discount from, or rebate upon, such price, on the condition, agreement or understanding that the purchaser thereof shall not use or deal in the products, merchandise, supplies or other commodities of a competitor or competitors of the seller, where the effect of such sale or contract for sale, or such condition, agreement or understanding, may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

Rule 24—Coercion:

(a) It is an unfair trade practice for any member of the industry to coerce another, by threats of reprisal, intimidation or other coercive methods, to dispose of sales finance contracts to a specific finance company selected by such member or to specify or accept insurance through a specific insurance company, with the effect of thereby substantially lessening competition, tending to create a monopoly or unreasonably restraining trade.

(b) It is also an unfair trade practice to use any other form of coercion, intimidation or threats for the purpose or with the effect of bringing about a substantial lessening of competition, tendency to create a monopoly or unreasonable restraint of trade.

Rule 25:

(a) *Prohibited Discrminatory Prices, or Rebates, Refunds, Discounts, Credits, Etc., Which Effect Unlawful Price Discrimination.* It is an unfair trade practice for any member of the industry engaged in commerce[1], in the course of such commerce, to grant or allow, secretly or openly, directly or indirectly, any rebate, refund, discount, credit, or other form of price differential, where such rebate, refund, discount, credit, or other form of price differential effects a discrimination in price between different purchasers of goods of like grade and quality, where either or any of the purchases involved therein are in commerce[1], and where the effect thereof may be substantially to lessen competition or tend to create a monopoly in any line of commerce[1], or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination or with customers of either of them: *Provided, however:*

(1) That the goods involved in any such transaction are sold for use, consumption, or resale within any place under the jurisdiction of the United States;

(2) That nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered;

(3) That nothing herein contained shall prevent persons engaged in selling goods, wares, or merchandise in

commerce[1] from selecting their own customers in bona fide transactions and not in restraint of trade;

(4) That nothing herein contained shall prevent price changes from time to time where made in response to changing conditions affecting either (a) the market for the goods concerned, or (b) the marketability of the goods, such as, but not limited to, actual or imminent deterioration of perishable goods, obsolescence of seasonal goods, distress sales under court process, or sales in good faith in discontinuance of business in the goods concerned.

(b) *Prohibited Brokerage and Commissions.* It is an unfair trade practice for any member of the industry engaged in commerce[1], in the course of such commerce, to pay or grant, or to receive or accept, anything of value as a commission, brokerage, or other compensation, or any allowance or discount in lieu thereof, except for services rendered in connection with the sale or purchase of goods; wares, or merchandise, either to the other party to such transaction or to an agent, representative, or other intermediary therein where such intermediary is acting in fact for or in behalf, or is subject to the direct or indirect control, of any party to such transaction other than the person by whom such compensation is so granted or paid.

(c) *Prohibited Advertising or Promotional Allowances, Etc.* It is an unfair trade practice for any member of the industry engaged in commerce[1] to pay or contract for the payment of advertising or promotional allowances or any other thing of value to or for the benefit of a customer of such member in the course of such commerce as compensation or in consideration for any services or facilities furnished by or through such customer in connection with the processing, handling, sale, or offering for sale of any products or commodities manufactured, sold, or offered for sale by such member, unless such payment or consideration is available on proportionally equal terms to all other customers competing in the distribution of such products or commodities.

(d) Prohibited Discriminatory Services or Facilities. It is an unfair trade practice for any member of the industry engaged in commerce[1] to discriminate in favor of one purchaser against another purchaser or purchasers of a commodity bought for resale, with or without processing, by contracting to furnish or furnishing, or by contributing to the furnishing of, any services or facilities connected with the processing, handling, sale, or offering for sale of such commodity so purchased upon terms not accorded to all purchasers on proportionally equal terms.

(e) *Inducing or Receiving an Illegal Discrimination in Price.* It is an unfair trade practice for any member of the industry engaged in commerce[1], in the course of such commerce, knowingly to induce or receive a discrimination in price which is prohibited by the foregoing provisions of this Rule 25.

(f) *Purchases by Schools, Colleges, Universities, Public Libraries, Churches, Hospitals, and Charitable Institutions Not Operated for Profit.* The foregoing provisions of this Rule 25 relate to practices within the purview of the Robinson-Patman Antidiscrimination Act, which Act and the application thereunder of this Rule 25 are subject to the limitations expressed in the amendment to such Robinson-Pat-

[1] As here used, the word "commerce" means trade or commerce among the several States and with foreign nations, or between the District of Columbia or any Territory of the United States and any State, Territory, or foreign nation, or between any insular possessions or other places under the jurisdiction of the United States, or between any such possession or place and any State or Territory of the United States or the District of Columbia or any foreign nation, or within the District of Columbia or any Territory or any insular possession or other place under the jurisdiction of the United States; Provided, That this shall not apply to the Philippine Islands.

man Antidiscrimination Act, which amendment was approved May 26, 1938, and reads as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That nothing in the Act approved June 19, 1936 (Public, Numbered 692, Seventy-fourth Congress, second session), known as the Robinson-Patman Antidiscrimination Act, shall apply to purchases of their supplies for their own use by schools, colleges, universities, public libraries, churches, hospitals, and charitable institutions not operated for profit." (52 Stat. 446; Supp. 4 U.S.C. Title 15, Sec. 13c).

Rule 26 — Unlawful Conspiracies and Combinations to Fix or Control Prices, Suppress Competition, Restrain Trade or Create Monopoly:

It is an unfair trade practice for any member of the industry, directly or indirectly, to enter into, or take part in, any unlawful combination, conspiracy, agreement, understanding, concert of action or scheme between two or more members of the industry, or of any organization or group of persons or concerns, (a) to fix, depress or control the prices which any member of the industry may allow or pay for used motor vehicles, or to fix, maintain, enhance or control the prices at which any member of the industry may sell motor vehicles either new or used; or (b) to otherwise suppress competition, restrain trade, or create monopoly.

Rule 27—Aiding or Abetting Use of Unfair Trade Practices:

It is an unfair trade practice for any member of the industry to aid, abet, coerce or induce another, directly or indirectly, to use or promote the use of any unfair trade practice specified in these rules.

Group II

Rule A—Cancellation of Dealer Agreement:

The cancellation by either party to a manufacturer-dealer agreement without cause and without due and reasonable notice is condemned by the industry.

Rule B—Cost Records:

It is the judgment of the industry that each member should independently keep proper and accurate records for determining his costs.

Rule C—Arbitration:

The industry approves the practice of handling business disputes between members of the industry and their customers in a fair and reasonable manner coupled with a spirit of moderation and good will, and every effort should be made by the disputants themselves to compose their differences. If unable to do so, they should, if possible, submit these disputes to arbitration.

Determining Damping Coefficients

(*Continued from page 255*)

imately 200,000 stress reversals.

Generally speaking, the damping of the different grades is the greater the poorer the quality of the cast iron from the tensile-strength standpoint, and also the lower its modulus of elasticity in torsion.

The damping coefficients of the several grades of cast iron are greater than those of crankshaft steels by from 80 to 120 per cent, but owing to the presence of other important damping effects, to take full advantage of the higher damping coefficients of the material to reduce the stresses caused by vibration at critical speeds, it is necessary to make the whole line of shafting of cast iron and to see to it that in addition to the crankshaft there is another shaft of considerable length which is highly stressed in torsion.

Excise Tax Collections Increased 74% in 1939

Automobile and motorcycle excise tax collections in the calendar year 1939 rose 74 per cent to a total of $51,063,558.59 over those of $29,405,043.98 in 1938, according to the Bureau of Internal Revenue. Taxes on parts or accessories rose to $8,956,583.98 from $7,067,610.99, while taxes on trucks increased to $7,144,897.68 from $5,230,377.77. Taxes on tires and tubes showed a sharp increase to $41,131,327.37 from $26,771,719.07. Gasoline taxes rose to $215,217,325.41 from $200,880,797.19. Reflecting a contrawise trend, taxes on lubricating oils declined to $29,836,486.69 from $30,495,339.29.

Nash Moves Parts and Service Departments

The parts and service departments of Nash Motors Division of the Nash-Kelvinator Corp., are being moved to Racine, Wis., as a result of rearrangement of the Milwaukee and Kenosha plants to provide expansion for the 1941 program to get underway this summer. About 200 men will be employed at Racine in the parts and service departments, which will be combined into one organization. P. G. Little, now with Nash at Kenosha, Wis., and with the company 24 years, will be in direct supervision of Racine operations.

Acetylene Association Will Meet in Milwaukee April 10

Latest practices and developments in various applications of the oxy-acetylene process in American industry will be the subject under consideration at the forthcoming Annual Convention of the International Acetylene Association to be held April 10, 11 and 12 in Milwaukee, at the Hotel Schroeder. Well-known engineers and technical experts in the oxy-acetylene industry have been selected to present a series of comprehensive papers of interest to operators of welding and cutting equipment, shop foremen, plant superintendents, operating and designing engineers, and executives.

CALENDAR

Conventions and Meetings

SAE National Aeronautic Meeting, Washington ....Mar. 14-15
SAE National Transportation & Maintenance Meeting. Pittsburgh.Mar. 28-29
International Acetylene Association, Convention, Milwaukee, Wis., April 10-12
Chamber of Commerce of the United States, Annual Convention, Washington, D. C............April 29-May 2
American Society of Mechanical Engineers. Spring Meeting. Worcester, Mass. ....May 1-3
SAE Summer Meeting, White Sulphur Springs, W. Va...............June 9-14
American Society for Testing Materials, Annual Convention, Atlantic City, N. J....................June 24-28

Shows at Home and Abroad

National Automobile Show, Grand Central Palace, New York.......Oct. 12-19

Labor

(*Continued from page* 238)

On the General Motors front, unions and the corporation were awaiting announcement by the National Labor Relations Board of dates for plant elections which would determine which union or unions would represent workers in collective bargaining negotiations. Hearings to determine the need for elections were discontinued after the interested unions and the corporation had agreed on stipulations which would call for elections on a plant rather than a corporation wide basis.

Vigorous campaigns for worker support are expected to be conducted by both the UAW-CIO and the UAW-AFL. It has been rumored that John L. Lewis and William Green will personally take a hand in the campaigns.